MEMOIRS OF THE DEPARTMENT OF
ANCIENT INDIAN HISTORY, CULTURE
AND ARCHÆOLOGY

पुस्तकालय
No. 3 पुस्तकालय
गुरुकुल कांगड़ी विश्वविद्यालय

SEMINAR PAPERS
ON THE
PROBLEM OF MEGALITHS IN INDIA

Editor
A. K. NARAIN
Assistant Editor
PURUSHOTTAM SINGH

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Printed in 1969

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Price Rs. 15/-

Published by the Department of
Ancient Indian History, Culture & Archaeology,
Banaras Hindu University.

Printed at
The Eureka Printing Works Private Limited, Varanasi.

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PREFACE

Ever since the first discovery of the megalithic remains in the fifties of the last century, these monuments have attracted the explorer's attention from time to time. The first careful and systematic study of these monuments was made by James Fergusson in 1872. Since then hundreds of megalithic sites and graves were located and a few of them opened both by professionals and amateurs for well over a century but the culture could not be placed in its proper perspective. The standardization of the megalithic terminology by Krishnaswami in 1945 and the excavations of Sir Mortimer Wheeler at Brahmagiri in 1947 proved to be of far reaching importance and added new dimensions to this vexed problem. Since then, careful excavations of several megalithic sites in south India by the Archaeological Survey of India and some Universities have added valuable data to our knowledge. However, megalithic remains in north and north-western India, although discovered quite early, could not receive our attention. It was in this background that the Universities of Banaras and Allahabad started exploring the megaliths of the Vindhyan range and the Archaeological Survey devoted its attention on the megalithic site of Bunzahom in Kashmir. The recent work in the Andhra Karnatak region and the C-14 determinations of archaeological samples from various sites of this culture provided new data and it was increasingly felt by scholars in the field to discuss the ramifications of such discoveries.

Such an opportunity was provided by the formation of the Indian Archaeological Society and at the time of the first annual Archaeological Congress in the first week of February, 1968, the Department of Ancient Indian History, Culture and Archaeology organised the seminar on the 'Problem of Megaliths in India'.

The topics were allotted to different workers in the field but as the seminar was held at short notice, some of the contributors could not send their papers. None-the-less, the seminar was attended by leading anthropologists like Prof D.K. Sen and Prof. L.P. Vidyarthi and eminent Indologists. like Prof. R. B. Pandey, besides the fellow archaeologists. The papers were discussed in two sittings on February 4, 1968 and the Seminar was presided over by Prof. H.D. Sankalia. I take this opportunity to express my heartiest thanks to all those scholars who contributed their valuable papers and participated in the seminar. I am thankful to all my colleagues in the Department for their valuable cooperation, particularly Dr. Purushottam Singh, who assisted me in editing and seeing the whole material through the press. The Eureka Printing Works Pvt. Ltd. deserve our thanks for printing the proceedings neatly and expeditiously.

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The Origin and Distribution of Megaliths in India[1]

K. N. Dikshit

Fresh thinking on the origin and distribution of megaliths in India is called for as new evidences by way of C-14 dates have recently been furnished on the basis of the material from scientific excavations. In this paper are also reviewed all important theories as to origins which have been offered from time to time besides attempting a detailed description of the megalithic types and their possible extra-Indian counterparts which may have been responsible for the make up of this culture and then the distribution of the types in the Sub-continent. In conclusion a retreat is made to the question of origin.

I

Among the many theories advanced for the origin of megaliths in India, the one proposed by Wheeler[2] gives for the first time a definite date for the beginning of the megalithic culture of south India on the basis of the stratigraphy furnished by excavation at Brahmagiri, to the beginning of the third century B.C., but on the question of origin of the megalithic architecture in India he is silent although he mentions the possible resemblance of Indian megalithic types with the megalithic structures of Western Asia and Europe. The presence of iron and Black-and-red ware in the southern megalithic culture, has been attributed by him to Gangetic plains and Malwa respectively. This culture was represented at the site by pit-circles and cist-circles. Later on a few more excavations were carried out but none of these provided any radical change in time-bracket.

The megaliths in south India, according to Gordon Childe[3], are not likely to be affected by the land-borne impulses from Iran but exposed rather to maritime influences. D.H. Gordon[4] associates this architecture "with the people whose ships plied between the Indian coast and southern Arabia in the first half of the 1st millennium B.C. and through them in some way with the megalith-builders of the West. Haimendorf[1] also favours immigration by sea or south ward movement along the Western coast of India. Heine-Geldern[2] thinks that megalithic tradition entered India in several waves but by land-routes and the northern megalithic structures may be independent from the southern ones.

---

[1] During my stay in West Germany, I studied the problem of megalithic architecture of northern Europe under the guidance of Prof. H. Schwabedissen of Cologne University.

[2] Wheeler, R. E. M., "Brahmagiri and Chandravalli 1947," *Ancient India*, No. 4, p. 202, and *Early India and Pakistan*, 1953, p. 163.

[3] Childe, V. G. "Megaliths", *Ancient India*, No. 4, pp, 4-13.

[4] Gordon, D. H. *The Prehistoric Background of Indian Culture*, 1958, pp. 155-161.

In 1961 Banerjee[3] read a paper in the International Conference of Asian Archaeology. He suggested that the megaliths in India were possibly inspired by the cairn-burials of Baluchistan and Persian and Baluch Makran and were introduced in south India from north and flourished between Circa 700 B.C. and 200 A.D. Due to the presence of technologically advanced iron industry with the south Indian megaliths, Banerjee based his arguments around the antiquity of iron in India and thus extended a workable migrational theory from north to south.

II

The excavation at Hallur, District Dharwar, Mysore, is very interesting and remarkable as it shows a continuity between late neolithic and early megalithic phase. The phase IA is pure neolithic, but in phase IB a new industry of Jorwe ware, copper implements and blade tools also made their appearance. In period II (Overlap) which has been assigned to the dolmenoid-cists (dolmen) at the foot of the Bhairvanapada hill, a marked carination in the pots of white painted Black-and-red ware can be seen. This period revealed for the first time the presence of iron arrow-heads and spear-heads.

The extension of C-14 datings at Hallur[4] give us some of the fixed points from the neolithic to megalithic phases. The lowest layer 14 (period IA) has given the dating to about (T. F. 580) 1710± 105 B. C. The layer 7 (sub-period IB) just prior to the arrival of megalithic culture is dated to (T. F. 575) 1030±105 B. C. The two dates of period II deposit (overlap) starting from layer 5 and 6 are dated (T. F. 573 & 570) 945±100 and 1005± 105 B. C. respectively.

---

[1] C. von Furer Haimendorf, "New Aspects of the Dravidian Problem", *Tamil Culture*, II, 1953.

[2] R, von Heine Geldern, *Das Megalith problem*, Wenner Gren Foundation, 1958.

[3] Banerjee, N. R., *Iron Age in India*, 1965, p. 264, and "The Megalith Culture of South India", a paper read in the Conference of Asian Archaeology, 1961.

[4] Information from Dr. M. S. Nagarajarao while author visited Cambridge University in 1966.

The end of megalithic phase is well represented at Bainapalli, a megalithic-neolithic site in District North Arcot, Madras. The C-14 dating sealed here the chapter of megalithic period, around 4th to 3rd century B. C. (T. F. 350) 380±105 B. C., though it is difficult to say that this date comes from post-megalithic or end-megalithic phase.[1] In the area of North Arcot and Salem only megalithic cists and stone-circles were noticed.[2]

These two excavations provide a time-bracket of megalithic culture on the soil of south India from the beginning of the 1st millennium B. C. to 4th-3rd century B. C. It is needless to emphasize that more C-14 dates are needed to confirm this bracket.

III

In India we are not in a position to present anything like megalithic chronology even in loose chronological order, as has been done especially in northern Europe where Sprockhoff in 1938 based his morphological analysis of north German megalithic tombs on the simple classification of Montelius *'dos-ganggrift-hallkist'* first produced in 1874 at the Stockholm Congress.[3] The Montelian system of three broad classification of megalithic structures was widely used in Western Europe because it was not only a typological sequence but also presented a kind of chronological order.[4]

In 1944 Krishnaswami[5] furnished for the first time in India, a set of megalithic nomenclature based on definite ideas but due to the non-availability of the data in his hands, it was not possible for him to extend any chronological typology in his exploratory survey of megalithic monuments. The main difficulty with his classification is

---

1. Agarwal, D P. and Kusumgar, S, "Radio-carbon Dates of Samples from Southern Neolithic Sites", *Current Science*, Dec. 5, 1966, pp. 585-86.

2. *Indian Archaeology 1964-65, A Review*, pp. 38-40.

3. Sprockhoff, E,, *Die Nordische Megalithkultur*, 1938, p. 164.

4. Nordmann, C. A. *The Megalithic Culture of Northern Europe*, Helsinki, 1933, p. 137" Montelius, O, Orienten och Europa, Antikvarisk Tidsar, 13, I, 1905, I ff. and Muller, S., *Nordische Altertumskunde*, I, (1897), 55 ff.

5. Krishnaswami, V. D., "Megalithic Types of South India, "*Ancient India*, No. 5 (1949), pp. 35-45,

that he could not keep the dolmen and cist separately. Basing my arguments on the classification adopted in Northern Europe, the word 'dolmenoid-cist' does not serve any purpose because cists are chronologically later there than dolmens.

Krishnaswami has classified the dolmenoid-cists into three sub-types; D1, D2 and D3. But in fact they represent two broad types, which may be described as follows :

Cist

The sub-type D1 is a box-like chamber inserted after scooping out the natural surface. Such constructions of four orthostats made out of thin granitic or lateritic slabs ranging from 0.5 to 0 10 meters with port-hole in one of them, are much later in the megalithic hierarchy of north Africa, Palestine and Europe. It is a very good type to call as 'Cist'.

Dolmen

It is constructed out of untrimmed granitic boulders resting on the surface. The so-called dolmenoid-cist (D2) from Kavanur (*Ancient India*, No. 5, Pl. XA) is a five sided dolmen.

The sub-type D3 is just like D2. The dolmenoid-cist from Sanur[1] (*A. I.* No. 12, Pl. VIII A & B) is a six-sided or somewhat circular dolmen and seems to be slightly more evolved from sub-type D2.

It is not evident on what grounds Krishnaswami distinguished D2 from D3 when the fact is that all the megalithic monuments are sometimes found covered with cairns.

Thus in India also one can notice an evolution of dolmens as happened even in northern Europe (Fig. 1).

Besides cist and dolmens a few other types are also present.

Menhir

The presence of menhir, a single monolith set up near or at a burial spot in south India is interesting but 'satisfactory associations for menhirs or standing stones are scarcely obtainable.' It is difficult to assign any beginning or end of this type.

---

[1] Banerjee, N. R., "The Megalithic Problem of India," *Studies in Prehistory*, Robert Bruce Foote Memorial Volume, Calcutta, 1966, p. 167.

Under-ground rock-cut caves

The rock-cut caves[1] of four types on the Western Ghat in Kerala region provide a new constructional idea in south India. It can be also defined as an experiment of under-ground passage graves as in Portugal. A few caves have also yielded small-sized sarcophagi.

The rock-cut caves of similar types can be noticed in the Mediterranean region and even in early historical times by its 'Etruscan funerary architecture'. The Mycenaean rock-cut tombs of irregular or multichambered plan in the eastern Mediterranean and later on Philistian tombs of rectangular plan were frequently reused in later periods, but the use of ledges or benches for the deposit of burials was a new feature in Palestine and in other countries of north Africa which was carried over well into the later Iron age in the popular 'bench-tomb' type.[2]

The terracotta-legged sarcophagus with peculiar moulded animal heads on the lids, invariably placed in east-west orientation, are sometimes reported from dolmens, rock-cut caves and cairn-circles in south India. Similar plain or anthropoid clay coffins with or without legs were also noticed outside India viz. from the iron bearing Philistian tombs of about 12th century B. C., located along the southern coast of Palestine. The clay coffin from Beth-Shan have peculiar head-dress moulded on the lids. This practice appears to be derived from Egyptian through Canaanites. Further east in the neighbourhood of Baghdad[3], a remarkable link is noticeable in the oblong, short-legged terracotta sarcophagi to those found in south India.

Unfortunately we do not have any C-14 dates for those caves for such dates would greatly help in formulating the chronology of

---

1. Sharma, Y. D., "Rock-cut Caves in Cochin", *Ancient India*, No. 12, pp. 93-115. The presence of benches in the cists at Porkalam and Sulur convey some echo of the rock-cut cave architectnre. This fact pre-supposes the chronological priority of rock-cut caves over cists.

2. Waldbaum, J. C., "Philistine Tombs at Tell Fara and their Agegean Prototypes", *American Journal of Archaeology*, Vol. 70, No. 4, Oct. 1966, pp. 331-340 Dr. H. Straube of Cologne University has told me that the rock-cut caves of Cochin type can also be seen at Kunama in north Ethopia.

3. Edited by E. Rapson, *The Cambridge History of India*, Cambridge, 1922, p. 615. Walhouse while writing in *Indian Antiquary*, Vol. V. pp. 255-256, 1876, mentions a terracotta coffin from a tomb in Rhodes for comparison with Indian ones. Many monuments corresponding to Indian types can be also seen in Siniatic Peninsula.

Indian megalithic types particularly because this type is analogous with the types in Western Asia in many respects.

Kuda-kallu and Topi-kallu

These are indigenous types and so far have no known relation outside India. These types may perhaps represent a bridge between the rock-cut megalithic types to structural megaliths in Kerala region.

It seems that Indian megaliths are composed of different traits, introduced by different people at different times, while some of the varieties seem to have been imported, there are quite a few which may have been evolved independently. The types like urn-burial and burial by inhumation in pits is a local contribution by the neolithic-chalcolithic communities of south India and it also cannot be ruled out that the bearer of megalithic tradition might have borrowed the pottery types from these communities who have already paved their way in this region.

IV

In India there is no uniform megalithic culture in existence. From north to south and east to west, India is dotted with megalithic monuments but there are great differences as to the cultural milieu and in reality only a few restricted types can be regarded as common property.

Megaliths in the Deccan and South India

From Nagpur to Cape Comorin, the megalithic monuments constitute an interesting unit consisting of different types like dolmen, rock-cut caves, *kuda-kallu*, *topi-kallu* cist, stone-circle, menhir etc., but many other practices like urn and extended burials in deep and shallow pits have also been included in it on the basis of identical culture-complex viz. pottery and other finds including stone, shell and iron objects.

The distribution of these types form different groups in southern Peninsula. The Southern tip dominates with the practice of urn-burial, though a few other types like cist, stone-circle etc. are also present whereas from North Arcot (Madras) to Mysore all the types; dolmen, cist and stone-circle are leading. The area of Andhra has menhir cist, stone-circle and the practice of extended burial, but in eastern Maharashtra generally stone circle is seen though other types like cist and menhir are also occasionally present. The rock-cut caves in Kerala region have their separate distributional area, but

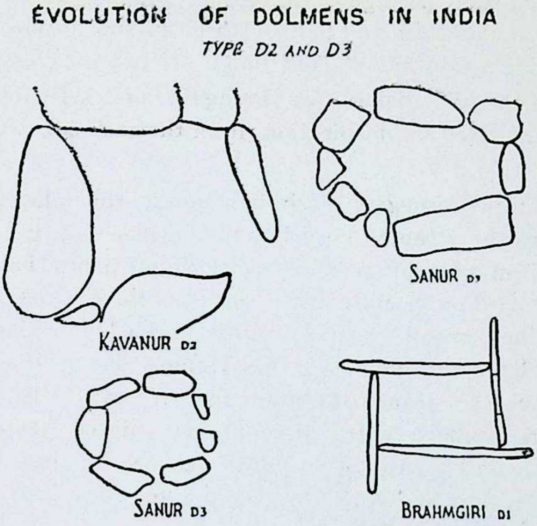
EVOLUTION OF DOLMENS IN INDIA
TYPE D2 AND D3
KAVANUR D2
SANUR D3
SANUR D3
BRAHMGIRI D1

Fig. 1. Evolution of dolmens in India.

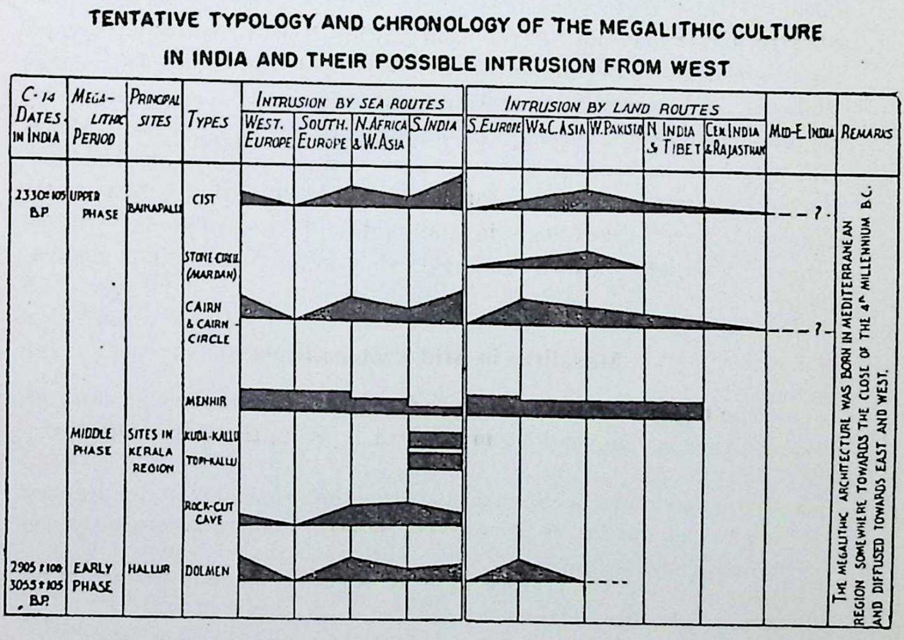
TENTATIVE TYPOLOGY AND CHRONOLOGY OF THE MEGALITHIC CULTURE IN INDIA AND THEIR POSSIBLE INTRUSION FROM WEST

Fig. 2. Typology and Chronology of Megaliths in India and subsequent diffusion from South Europe by sea and land routes.

the cist with a short passage as noticed at Brahmagiri, stone benches in the cists at Porkalam and Sulur, three pillars inside the circular cist supporting a capstone at Terdal and a cist of the cross-type having pillars along the principal axis at Halingali, both in District Bijapur,[1] might have received the inspiration from the rock-cut passage graves of Kerala.

I hesitate to suggest a chronology at this place so much at variance with the accepted view but the pottery and iron implements encountered in the different excavations of habitational areas and megaliths carried on in south India suggest three possible megalithic phases. The earliest pottery, white painted Black-and-red ware[2] can be co-related with dolmen phase (Hallur), but in the middle phase (rock-cut caves) the principal ceramic industry was only plain Black-and-red ware although a few discountable painted sherds were also noticed. The last phase of megalith (cist-phase) has yielded plain Black-and-red ware and Russet-coated painted ware (Fig. 2).

Up-till now it is a general belief of the archaeologists that the megalithic architecture entered India with a fully evolved iron industry, but it may not be true. Megalithic iron technology may be handicapped in the beginning due to the lack of the knowledge of the local ores. The use of the plentiful local ores must have resulted in the production of the variety of implements in due course. Along with pottery a steady increase was also noticed in iron implements. Started by arrow-heads and spear-head in the early phase, a few more types made their appearance in the middle phase. The last phase witnessed a variety of different types of iron implements not known before.

Megaliths in Mid-Eastern India

The region of mid-eastern India has assumed importance on account of recent excavations in eastern U. P. [3], the main types are

---

1. The Urn-burial site at Adichanallur has yielded painted Black-and-red ware sherds having only dots on the exterior surface. Nothing definite can be said regarding the chronological position of Adichanallur except that the urn burial practice persisted for a longer time as is evident by the presence of the largest variety of iron objects.

2. *Indian Archaeology, 1965-66,-A Review,* pp. I—64-65 (unpublished).

3. Ibid. 1962-63 to 64-65. Recently a tumuli has been excavated at Khuntitoli in Bihar (IA.--A Review, 65-66, pp. I–19-20), but its megalithic association is the subject of discussion.

cairn, cist with or without circle and tumulus. The walls of the cist are constructed out of multiple small stone pieces.

The typological co-relation of these monuments with south India leaves an impression that this group of so-called megaliths has no connection at the moment with the well-known group of south India and demands a separate label for its identity because it may not fit into the time-scale suggested for the southern types.

Megaliths in North and Central India

The northern part of Indo-Pak sub-continent has also yielded a number of different types of megaliths. (1) The stone-circle at Asota near Mardan has no known constructional parallel in south India. (2) No port-hole was noticed in the cists at Waghador, but recently Fairservis claims to have discovered one.[1] (3) The megalithic structures at Dausa and Visalpur and in the neighbourhood of Agra cannot be compared at the moment with south India, as nothing substantial is known about their architecture. (4) Dolmens are absent in north India. (5) The presence of menhirs at Burzahom near Srinagar and in the District of Anantnag and on the area bordering Ladakh and Tibet and a cromlech at Deo-Dhara, District Almora, are interesting but in the present knowledge these monuments seem to have extra-Indian affiliation.

From the foregoing it would appear that the builders of megalithic types like stone-circles, cists, cairns etc. in northern region probably entered India by land-routes, although the possibility of taking the sea-route cannot be ruled out altogether. This wave of megalithic idea in my opinion has nothing to do with the megalithic architecture of south India.

V

While examining the view of Banerjee one can notice only the mention of port-hole cist and cairns whereas other types are completely omitted. Even, if, we may not press this typological point, then again we are confronted with the problem of inter-connection in time and space between the iron bearing megalithic culture of Hallur (south India) and the cairn-burials of Makran which are dated on the basis of the revised C-14 dates of Sialk Necropole B to the same time-

---

1. Information confirmed from Dr. W. A. Fairservis while I had an opportunity to meet him in March, '67.

bracket. This closeness in time does not corroborate the migrational theory, as for the intrusion of the knowledge of iron metallurgy in south India from north is concerned, at least 2 or 3 centuries are required on the way. The iron technologies of north and south may be independent to each other. Heine Geldern[1] without ascertaining the missing link agrees with Banerjee that the port-hole cists of south India are derived from port-hole slab-graves of Tepe Sialk and the port-hole dolmens of the Caucasus.

As stated already the stone-circle at Asota has no known constructional parallel in south India. The type dolmen is absent and even the stone-cists at Waghador by Karachi still continue to be intriguing, but inspite of all this Wheeler is looking to Karachi as the spring-board of megaliths in India.[2]

Lal[3] has drawn a similarity between the pottery of the 'C-group people' and that of south Indian megaliths from his excavations at Tumus in Nubian desert (U. A. R.). Straube[4] of the University of Cologne, places the pottery of the C-group people from his exploration in Ethopia between Circa 2,000 and 1,000 B. C.

It is likely that the Western Asiatic maritime communities practising megalith-architecture entered south India through Persian Gulf or southern Arabia[5] in the hope of founding a new colony. They may have reached Western Ghat towards the close of the second millennium B. C. and in the long run this megalithic idea penetrated in the hinterland of Mysore and in the other regions of the Deccan and south India.

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1. Dr. H. Geldern has mentioned this view while writing the foreword of *Iron Age in India'* written by N. R. Banerjee, 1965., p. viii.
2. Wheeler, R.E.M., *Early India and Pakistan*, 1965, p. 168.
3. Lal, B.B., "The only Asian Expedition in Threatened Nubia : Work by an Indian Mission at Afyeh and Tumus", *Illustrated London News*, April 20, 1963.
4. Information from Dr. H. Straube of the Institute of Ethnography, Cologne, West Germany. See also R.P. Azais and R. et Chambard, *Clinq Annees de Recheres Archaeologius en Ethopie*, Paris, 1931.
5. Field, Henry, *Ancient and Modern Man in Southwestern Asia*, University of Miami Press, Florida, 1956, Belgrave, James H. D., *Welcome to Bahrein*, Stouleridge, Worchestershire, England, 1953, Bent, Theodore, *Southern Arabia*, Chapters 1 & 2, Mackay, E. "Bahrein and Hemamieh", *Brit. Sch. of Arch. in Egypt*, 1929 and Prideaux. "The Sepulchral Tumuli of Bahrein", *Annual Rep. Arch. Sur. of India*, 1907-08.

One last point needs to be mentioned about the way of the life of the megalithic community. It is not burials alone which tell us all about this community. Little attention has been paid to excavate habitation-sites, so as to know how the megalithic folk lived and what was the organisation of the village, why urbanization did not prosper while in contemporary north India under the impact of Iron-Age, city-state came into being. Does this mean that the megalithic folk jealously guarded their traditions against any cultural contact and if so when was the barrier of isolation broken up ? All these points need a solution and this can be done with a thorough survey of the habitation-sites of the megalithic community.

While quite a lot of sporadic work has been done in the field of megalithic studies, a coordinated and concerted attempt has not been made to resolve this problem. In this venture archaeologists and social and physical anthropologists have to lend their hand for a proper solution of the problem. It is for the archaeologists to study structural typology of the monuments and try to work out a typological sequence on this basis. This should be supplemented by a thorough classification of the pottery types and other materials like beads and more specially the iron tools. Megalithic iron technology has not received due consideration. Attempt should be made to analyse the iron tools and ores used, as also their knowledge of smelting and carburising. Side by side, study of the skeletal remains on area-wise and type-wise classification should also be attempted, to find out, if different racial types were responsible for different types of megalithic monuments and pottery. In order to achieve this about 100 selected sites of this culture spread over the entire country may have to be tackled in a very planned manner by a body of experts and results thoroughly analysed. After such analysis is done it will be possible to co-relate and place in proper horizon megalithic types and material already brought to light earlier and a broad evolutionary sequence worked out. This in turn can be of great help in studying data already available from areas outside India so as to tackle the question of the origin of the Indian megalithic problem.

Acknowledgement

I am thankful to Shri M. N. Deshpande for his guidance and encouragement throughout the writing of the paper. Thanks are also due to Shri B. K. Thapar for going through the script and to Shri D. P. Agarwal for certain valuable suggestions.

Megalithic Monuments of the Lower Krishna Basin

H. Sarkar

1. Previous Work

Megalithic monuments "are very common, perhaps more frequent than in any other part of India, in the valleys of the Kistnah and its tributaries." Without any doubt, it is just an observation—an observation by James Fergusson.[1] It does not, however, appear to be quite off the mark, although I am aware of the fact that we have neither any statistical data nor distribution maps to support this convention. At the same time, if someone claims it to be otherwise, he is equally handicapped by the absence of comparative data, except in the case of Chingleput district[2] regarding the geographical distribution and concentration of megalithic monuments, including variations of the type.

The absence of a map-picture based on primary ground survey is nowhere felt more than in the case of megaliths of the lower Deccan within the present political boundary of Andhra Pradesh, for such monuments are widespread in the districts of Gulbarga, Warangal, Karimnagar, Adilabad, Nalgonda, Guntur, Krishna etc. On the other hand, the study of megalithic monuments in the region began more than a century ago. Meadows Taylor conducted extensive survey of such tombs at Jiwarji, Hegaratgi, Rajanakallur in district Gulbarga, Yemmi Gudi in district Raichur, and several other sites, in the third quarter of the nineteenth century.[3] In 1872, Boswell opened a few megaliths at Karempudi, in district Guntur.[4] James Fergusson noticed such monuments not only at Amaravati but also at the roots of the hills situated at its neighbourhood.[1] Several megalithic sites were included by Sewell in his list,[2] but much of his information was based on second-hand sources. A few megalithic monuments in parts of the upper Godavari and Krishna districts were described by Vanstavern in 1875.[3] He had also recorded the fact that these monuments were known locally as *rākshasagullu*. Still now the local people in different parts of Guntur district mention them as *rākshasagullu*.

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[1] James Fergusson, *Rude Stone Monuments in All Countries : Their Age and Uses*, (London, 1872), p. 476.

[2] The ground-survey of megaliths in Chingleput, Madras, by V. D. Krishnaswami is the only scientific survey, so far carried out in India. See his "Megalithic Types of South India", *Ancient India*, No. 5, (1919), pp. 35-46.

[3] Meadows Taylor, *Megalithic Tombs and other Ancient Remains in the Deccan*, (Hyderabad, 1941), reprinted from the *Journal of the Bombay Branch of the Royal Asiatic Society*, III-IV (1851-52), and the *Transactions of the Royal Irish Academy*, XXIV, pt. III (1862).

[4] J. A. Boswell, "On the ancient Remains in the Krishna District : Scythic Remains of sepulchre," *Indian Antiquary*, I, (1872), pp. 150-51.

Despite the accumulation of the vast mass of data unfortunately no scientific survey has ever been carried out in the Krishna basin. No doubt, a few excavations in the former Hyderabad State were conducted by various scholars[4] but our knowledge regarding the megalithic culture of the region remained incoherent and sketchy for a very long time. It was only with the formation of the Nagarjunakonda Excavation Project, in 1954, that fresh attention was given to these monuments in the lower Krishna valley. Our present knowledge of the megalithic monuments of the area is based primarily on the excavations at the three sites, Nagarjunakonda, Yeleswaram and Kesarapalle. It would be worth-while to give here a summary of the results of the excavations at the above mentioned sites, and also of the explorations carried out in 1960-61 in some parts of Krishna and Guntur districts[5].

2. Excavations of Megalithic Sites

All the three sites, Nagarjunakonda, Yeleswaram and Kesarapalle are in the lower Krishna valley, and are situated respectively in the districts of Guntur, Nalgonda and Krishna.

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[1] James Fergusson, *op. cit.*, p. 474.

[2] R. Sewell, *List of the Antiquarian Remains in the Presidency of Madras*, (Archaeological Survey of Southern India, 1882.)

[3] T. Vanstavern, "Notes on the Antiquities found in parts of the upper Godavari and Krishna Districts," *Indian Antiquary*, IV, (1875), pp. 305-06.

[4] E. H. Hunt, "Hyderabad Cairn Burials and Their Significance," *Journal of the Royal Anthropological Institute*, LIV, (1929), and *Annual Report of the Archaeological Department of H. E. H. the Nizam's State*, 1915-16, 1934-35, 1935-36 and 1936-40. Also see K. S. Ramachandran, "A Bibliography on Indian Megaliths," serialized in the *Quarterly Journal of the Mythic Society*, LI to LIV.

[5] A. Ghosh, ed., *Indian Archaeology-A Review*, (here-after abbreviated as *I.A.R.*), 1960-61, p 1 and 1961-62, p. 1.

Incidentally, megalithic clusters at these places as well as at other sites in the lower Krishna valley appear quite smaller in extent than those noticed in the mid-land specially to the west of 79° of longitude. Brahmagiri, for instance, has no less than two thousand cists, while Jiwarji, according to Taylor's calculation, contains three hundred and seventy-five examples. Such large clusters at a particular place, also noticed at Junapani, near Nagpur, are absent in Guntur, Krishna, and also possibly in Nalgonda districts. The largest clusters at Nagarjunakonda and Yeleswaram, both the sites being now submerged under water, consisted of only fifteen and twenty-three megaliths respectively.

A. Nagarjunakonda

Nagarjunakonda revealed two different clusters of megaliths, viz. Sites 44 and 63. The cluster at Site 44, on the slope of a trap dyke, yielded only three examples : one of these megaliths was opened by Longhurst but it did not produce any remains or antiquities.[1] In 1956, Soundara Rajan excavated another megalith (Meg. I) at the same site, and it proved to be the richest at Nagarjunakonda.[2] Subsequently the third one was also opened but it was found to be entirely barren. The other cluster, Site 63, was located on a high ground away from any hill or hillock.

Megalithic monuments of Nagarjunakonda were all cairn-circles beneath which lay a deep pit or, as in two cases, buried cists. The stone-circles made of undressed granite boulders varied in diameter from 12 ft. to 30 ft. (3.66 m to 9.14 m) : both the cairn-circles with cist, had a diameter of only 18 ft. (5.49 m). Except in two cases, pit-circles of Site 63 had no capstones, which however, covered both the examples of cists. Diameters of stone-circles seem to have no bearing on the dimension of pits they enclosed. For example, the largest stone-circle with a diameter of 30 ft. (9.14 m) enclosed a pit measuring 9 ft. 9 in. x 3 ft. 10 in. x 7 ft. 9 in. (2.97 x 1.17 x 2.36 m.); on the other hand, the largest pit (10 ft. 6 in. x 5 ft. x 9 ft. (3.20 x 1.52 x 2.74 m.) had a stone-circle, with a diameter of 26 ft. 6 in. (8.07 m.). Similarly, the size of the pit, generally oblong in shape, appears to have had no relation with the number of skeletons interred, as the largest megalith yielded only splinters of bone and no pottery at all. The major axis of most of the pits at Site 63 was oriented north-south but east-west orientation was by no means rare. Both the cists, built of four orthostats of Cuddapah stones, were laid in east-west orientation.

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[1] A. H. Longhurst, *The Buddhist Antiquities of Nagarjunakonda—Madras Presidency*, Memoirs of the Archaeological Survey of India, No. 54, (Calcutta, 1938), p. 7, pl. II c and d.

[2] For information about the megalithic remains at Nagarjunakonda, see *I.A.R.* 1956-57, p. 36, and *I,A.R.* -1959-60, pp. 6-9. Also see H. Sarkar and B.N. Mishra, *Nagarjunakonda,* (New Delhi, 1966), pp. 11-12.

The stone-cist at Site 44 measuring 5′-11″ x 1′-2″ (1.80 x 0.35 m.) yielded the largest number of skeletons : four skulls along with some disarticulated long bones were placed inside the stone-chest while two skulls, besides some animal bones came from outside. Iron objects from this megalith, twenty-nine in all, included a dagger, a knife blade, a celt and a spear-head; a stone pestle and a terracotta whorl-bead were also recovered. Other grave-goods accompanying the dead comprised twenty-two pots. However, the cist at Site 63 measuring 5′-6″ x 1′-7″ (1.68 x 0.48 m.), disclosed only two femurs and a copper bangle; seventeen pots placed at three different levels also came to light. It may also be mentioned here that none of the cists had any port-hole, although it was noticed in some megaliths from Yeleswaram and Karempudi.

The most dominant mode of disposal of the dead was post-excarnation burial, notwithstanding the fact that two examples of complete inhumation were also laid bare. A total number of nineteen individuals was recovered from fifteen megaliths at Site 63, of which only nine megaliths yielded skeletal remains and the remaining six either only splinters of bone or no human bones at all. Both the examples of complete inhumation burial were from Site 63, and belonged to adult females. The one in Megalith XIV had her gold spiral ear-rings and a necklace almost in the same position as they had been originally worn. She was laid in north-south orientation, while the other woman, in Megalith XV, carrying no earthly vestiges, except pottery, was buried in east-west orientation, with head to the east. An interesting feature of the post-excarnation burial here was the arrangement of bones as it were in the extended position. Invariably, skulls were placed apart, and more often than not, both male and female skeletons had been placed side by side—a practice observed also in the upper stratum of the neolithic cemetery at Nagarjunakonda.

Bones in the pit-circles were laid on the three to six inches (8.6 to 15.3 cm.)—thick layer of ash. The primary offerings were arranged over this ashy bed, while the secondary offerings occupied a position higher than the first. Animal sacrifice seems to be a necessary part of interment ceremony—Megalith XII producing a clear example of such a rite. Of the three skeletons in this megalith one child and two animals—the human one lay at the lowest level, and the bovine skeleton was found about a foot (30.5 cm.) below the calf, with a stone bed. There are definite evidence to indicate that the skull-cap of the bovine animal had been sawed longitudinally across the teeth of the upper jaw with a sharp weapon. All this points clearly to animal sacrifice accompanying the final interment of the child.

It is evident from the above that adult male, female and child were inhumed, generally after exposure, in megaliths. We, however, do not know the practice followed in case of disposal of the infants. It has to be borne in mind that these megaliths contained remains variously of one, two, three or six individuals, thereby suggesting the possibility of their being used as some sort of family ossuary.

On the basis of the grave-furniture it is difficult to draw a line of demarcation between different groups of megaliths. Yet the definite absence of elongated ring-stands in both the cists at Nagarjunakonda need not be taken as fortuitous. Such ring-stands are by no means a universal feature in the megaliths of the Deccan and south India, for it is absent at Brahmagiri and Sanganakallu.

B. Yeleswaram

It is evident from the foregoing that pit-circles formed the dominant type at Nagarjunakonda but Yeleswaram, opposite Nagarjunakonda, on the other bank of the Krishna, showed a preponderance of slab-cists—but not of buried cists. At Yeleswaram, megaliths were distributed in four different clusters, and all of them occupied the foot of some hill or the other. Two of the clusters, Lohamancharu and Viraboyinukunta, both being situated close to each other, were located in the interior of the valley, while the other two, Kistapuram and the temple-site, were practically on the river-bank.

Megaliths of Lohamanchuru and Viraboyinukunta, without any exception, proved to be slab-cists, with edges of the orthostats protruding out on the surface. The cluster at the former site consisted of about twenty examples, of which five were excavated by late Dr. Sreenivasachar. He also opened four megaliths, out of twenty-three examples, at Viraboyinukunta. As reports on these excavations are not available it is difficult to describe them in details. What I am presenting to you is based primarily on my old notes taken at the time of an unofficial visit.

From outward appearance, megaliths of these two clusters may be divided into two classes, viz. (i) slab-cists, with stone-circles, and (ii) without any circle. In all the cases the cist-slabs generally of undressed granite were visible on the surface. They differed from the Nagarjunakonda ones in their being somewhat more squarish than rectangular. Further, the height of the orthostats was greater than that of Nagarjunakonda. The circles were made mostly of untrimmed granite boulders but at Viraboyinukunta, the use of basaltic boulders was noticed. The number of cists without circle at Viraboyinukunta was fifteen, and those with stone circles only eight. Even at Lohamancharu, the cists without stone-circles outnumbered the other variety. One of the megaliths here disclosed port-hole also : it was possibly a transepted cist. Morphologically, the megaliths of Lohamancharu and Viraboyinukunta appear quite developed as compared with simple slab-cists of Nagarjunakonda. In all the excavated megaliths of Viraboyinukunta and Lohamancharu, post-excarnation burial was the rule : very often bones including the skull were kept in heaps.

The temple site of Yeleswaram[1] yielded below the historical level, three different types of megaliths, viz., (i) two slab-cists, (ii) a cairn-circle, and (iii) an urn-burial. Structurally, both the cists, laid in north-south orientation showed evolved forms, and, therefore, not much different from those observed at Lohamancharu and Viraboyinukunta. One of them had a partition and was bereft of iron objects. Perhaps, disarticulated bones of three individuals were placed inside the transepted cist, having no port-hole. However, from the same site was unearthed another cist, with a port-hole in the northern slab : it contained a small cist but only a few splinters of bone.

The pit-circle from the temple-site had multiple capstones below which lay a pit containing two complete skeletons buried in extended position. They were placed one over the other on an ashy bed, alongside some iron objects and animal bones. In the urn-burial from this site, were found the remains of a human skeleton, along with a tanged dagger and two bowls of Black-and-red Ware. The Kistapuram site at the root of the Mallagutta hill also revealed a cluster of seven megaliths. Stone-circles, ranging in diameter from 18 ft. to 40 ft.

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[1] Md. Abdul Waheed Khan, *A Monograph on Yeleswaram Excavations*, (Hyderabad, 1963), pp. 4-9.

(5.49 m. to 12.14 m.). were made either of granite or basaltic rock. Three megaliths were opened but they did not contain any cist. As grave-goods were already removed at the time of my visit I am not in a position to say anything about the contents of these megaliths. It is believed that these megaliths yielded huge urns. Thus, on the whole, the megalithic monuments of Yeleswaram showed quite developed features, and also variety, than those found at Nagarjunakonda.

C. Kesarapalle

Both Nagarjunakonda and Yeleswaram are situated in the granitic zone but Kesarapalle, near Gannavaram, in District Krishna, is practically located in the Krishna delta.[1] Unfortunately, the site has been completely spoilt due to indiscriminate quarrying. Here no visible remains of megaliths in the form of stone-circles or cairn-heaps could be noticed on the surface since these were buried under an accumulation varying in thickness from 10 cm. to 60 cm.; traces of stone-circles, however, were observed by me in the exposed sections during explorations. Only buried cists, similar to Nagarjunakonda ones, came to light from this place. This inference was drawn after a careful examination of available traces, often represented either by a slab or mere impression of slabs on the ground; on rare occasions all the four orthostats of a cist were preserved. Capstones, dislodged from the original position, were seen scattered here and there. Unfortunately, contents of these chambers including the skeletal remains had been removed completely save a few pots and objects of iron. It may be recorded here that no port-hole was noticed in any of the available slabs made generally of dressed granite.

Cists were laid invariably in north-south orientation, and often in regularly arranged groups. In length, they ranged from 1.65 m. to 2.35 m., in width from 39 cm. to 1 m., in height from 45 cm. to 90 cm., and in thickness from 9 cm. to 15 cm. Pottery must have been placed outside the oblong chamber and in some cases at least, also on the surface of the sealed pit—a practice noticed in some examples at Nagarjunakonda and Lam, near Guntur. Besides pottery, the surface-exploration brought to view a few iron objects like wedge and spear-head.

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[1] H. Sarkar, "Kesarapalle 1962", *Ancient India*, No. 22, (in the press). Also *IAR*, 1961-62, p. 1.

Most important evidence from Kesarapalle was the location of megalithic habitation in close proximity to the megalithic cluster. Here megalithic deposit was found interlocked with the last phase of a chalcolithic culture. An important discovery is the occurrence of a N.B.P. sherd in the mid-level of the megalithic occupation succeeded by a Rouletted Ware deposit. The megalithic people lived in some shelter, for post-holes were quite common. Some triangular depressions or pits noticed in these levels might have been used as some sort of hearths as these were filled in with chunks of burnt earth and ash. Anyway, the megalithic habitation was by no means pretentious compared to their tombs for the dead. Nagarjunakonda and Yeleswarm did not, however, yield any habitation of the megalith-using people.

D. Some recently explored sites

Kesarapalle is not the only site in the lower Krishna basin where megalithic monuments occurred in proximity to some ancient settlement, for habitational mound close to some megalithic cluster was noticed at Motadaka and Nemalipuram, near Guntur. But, there is no clear evidence to ascribe them to the period of the megalithic monuments.

Motadaka, on the Guntur-Amaravati Road is a fairly extensive site of megalithic burials. Lam and Le Malle located on the same road, near Guntur, are also megalithic sites. Perhaps Boswell had these sites in mind when he wrote that, "To the westward of Amaravati on the Krishna there are a great number of rude circles of stone which have been noticed by Fergusson. A still greater number of these remains are found at a distance of four or five miles to the South-east where they cover the roots of the hills."[1] According to Boswell "they have always yielded cinerary urns", though it is difficult to say what he meant by it. The evidence, however, assumes importance once the discovery of megalithic urns below the famous *stūpa* at Amaravati is taken into account.

Much spoilt site at Lam yielded only pits enclosed by circles of untrimmed granite boulders. The pottery included elongated ring-stand, jar and vase. But the majority of the sites in Guntur district, specially Palnad taluk, appear to be of cist-type, the orthostats of which are visible on the surface. The Karempudi cists as reported by Boswell, are comparable with those from Lohamancharu and Viraboyinukuta. According to Boswell, "If it is a large one, it will usually be found divided into two or four cells or compartments. In each of these is found a quantity of burnt human bone." The last part of his statement may not be acceptable but I may remind you about the reference to burnt bones discovered by earlier scholars in the megaliths from the Deccan.[1]

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[1] J. A. Boswell, *op. cit.*, pp. 149-51.

3. Classification

We are now in a position to attempt a tentative classification of the megalithic monuments in the lower Krishna valley. Outwardly, these monuments may be divided into three broad groups, viz, (i) stone-circle around cairn-heaps, (ii) cist, and (iii) cist without any circle. Sometimes, as at Motadaka and Pochampadu double circle has also been noticed; Meadows Taylor observed it at Rajanakallur and Jiwarji, and Hunt at some sites near Hyderabad. Leonard Munn mentioned also of treble stone circles.[2]

On the basis of the internal evidence, megaliths of the lower Krishna valley may be divided in three broad types, viz., (i) pit-circles, (ii) urn-burial, and (iii) burial in slab-cists, the first two types being possibly associated always with stone-circles. Slab-cists are, again, subject to at least five sub-divisions, viz., (i) buried cist, (ii) cists with slabs projecting out on the surface; (iii) cists with port-hole either in the eastern or in the northern orthostat, (iv) transepted cist, and (v) cist within cist. It is evident from the above that pit-circles and urn-burials did not show much development. On the contrary, slab-cists, with several variations reveal a long chain of developement.

I have not included in this paper a few other types of monuments of probable megalithic affiliation. For example, menhirs and alignments[3] are reported from several sites of Andhra Pradesh. Also noteworthy is the occurrence of terracotta sarcophagi from the southern districts of Andhra Pradesh, the zoomorphic sarcophagus, a ram, from

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1. According to Hunt, "Burnt bones are found occasionally at Raigir and Dornakal". See his *op. cit.*, p. 148.

2. Leonard Munn, "Prehistoric and Protohistoric Finds of the Raichur and Shorapur Districts of H E.H. the Nizam's State," *Man in India*, XV, (1935), pp. 225-250. For Pochampadu, see *IAR*—1963-64, p. 1. Though the most common form is roughly circular, evidence of more or less regular rectangle to an elongated oval is reported from the Pulney Hills. See Rev. Jr. Anglade *Dolmens and Tombs of Pulney Hills*, published by the Anthropological Society of Bombay, p. 45.

3. F.R. Allchin, "The Stone Alignments of Southern Hyderabad", *Man*, LVI, No. 150, (1956).

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Sankavaram, in district Cuddapah is a unique discovery. But the region falls more in the central megalithic belt of Karnatak, Deccan and south India, roughly between 12° to 16° of latitude rather than in the lower Krishna basin, an area where real dolmen i.e. cist above the ground, and the dolmenoid cists are quite common.

Megalithic monuments of the lower Krishna valley may also be classified from the point of view of the mode of disposal of the dead. Undoubtedly, post-excarnation burial constituted the dominant mode, while complete inhumation occupied a secondary place. The former method seems to have a bilateral development, viz., interment in jars or urns, and post-exposure burial. Again, post-exposure burial may involve an earth-burial in pit or interment in stone coffin or cist. Further, claims by several excavators of the discovery of burnt or calcined bones from megaliths suggesting the practice of cremation cannot easily be set aside, yet it has to be admitted that it is not conclusively proved. Even if we discount the evidence of cremation, the sepulchral record and the mode of disposal of the dead from the lower Krishna valley clearly suggests the existence of more than one cultural element that consituted the megalithic complex of the lower Krishna basin.

Variations in orientation of dead body, pit, and cist are also not without any significance. North-south orientation was the rule in the megalithic burial-complex dominated by post-exposure burial and the use of stone cist. That certain groups preferred east-west orientation is evident not only from the alignments of cists, pits but also from the placements of the dead. Again there might have been groups who preferred to raise megaliths close to their habitation, as at Kesarapalle, while others favoured a place far away from their settlements. So many variations in funerary practices reflect a picture of fusion of divergent elements and differences in structural form are, perhaps, the material expression of similar trends.

4. Parallels in Earlier tradition

No culture, howsoever superior, can totally extirpate the earlier tradition, specially its spiritual experiences. It is, therefore, no wonder that megalithic traditions would inherit or assimilate certain traits from the preceding cultures. A comparison of the neolithic tradition of Nagarjunakonda with that of the megalithic may show the influence of the one over the other.

I have already mentioned that the megalithic pit-circles of Nagarjunakonda contained disarticulated bones arranged in the form as if in a complete burial. Moreover, in certain megaliths skeletons of both female and male were laid side by side. It will not be out of place to mention a few features of the neolithic burials of this valley. At this site was brought to light a cemetery with two strata of burial, one superimposed over the other. The earlier stratum disclosed only complete inhumation, while the later yielded the remains of both post-excarnation and complete inhumation—the former being the dominant practice. In the case of the post-excarnation earth burial an attempt was made to place the disarticulated bones in their original anatomical order. Further, there were two graves each exhuming double burial—one male and the other a female. Similarity between the two is so striking that we cannot regard them simply as accidental factors. Even the idea of cairn-circle was not wholly absent in the later neolithic phase of Nagarjunakonda, for an articulted skeleton of an adult male placed inside a shallow pit was covered by a cairn-heap.[1]

Similarly, urn-burial of the megalithic complex had its parallel in several earlier traditions. We need not take into account the post-cremation pot-burial of the Harappa culture because of the lack of consensus amongst the scholars. Yet the urn-burial tradition formed a definite trait in the chalcolithic cultures of the Deccan and western India. In fact, urn-burial for infants was in vogue amongst the neolithic population of Nagarjunakonda itself. In many respects, the post-exposure urn-burial of Cemetery-H at Harappa is comparable with that from Adichannallur[2] and Pulney hills.[3] In the circumstances, the use of urns in the megalithic tradition cannot wholly be regarded as a new trait.

But the use of slab-cists was certainly a new feature not met with in any of the earlier tradition except vaguely in the cairn-burial culture of Baluchistan.[4] I am inclined to believe that there is a basic difference between a buried cist and dolmen i.e. cist above the ground. Ideas underlying the two structural forms are quite different, burial cists express an idea of underground abode or grave, while dolmens are essentially derived from the concept of a house—house of the dead. If that be the case, dolmenoid cists, i. e. half-buried cists are only a compromise of two divergent ideas. The predominance of pits in the neolithic phases of Nagarjunakonda—and some of them were used as dwellings[1] is quite significant in this context. From this point of view buried cists come nearer to pit-circle than the dolmens or dolmenoid cists. Of course, one cannot wholly preclude the possibility of the arrival of a new people practising interment of exposed bones in buried cists. Even then, the commonness of ideas would lead to immediate acceptance of a new tradition by an earlier people.

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[1] H. Sarkar and B.N. Mishra, *op. cit.*, pp. 8-11.

[2] A. Rea, "Prehistoric Antiquities in Tinnevelly," *Annual Report of the Archaeological Survey of India*, 1902-03, pp, 111-43.

[3] Rev. Fr. Anglade, *op. cit.*, pp. 20-23.

[4] N. R. Banerjee has tried to connect the megalithic complex of south India with the cairn burial culture of Baluchistan. See his *Iron Age in India*, (Delhi, 1965), pp. 42-49.

We may, then, reasonably assume that megalithic tradition in the lower Krishna valley was the result of comingling of divergent traditions—old as well as new. It is beyond my scope and competence to disentangle all threads responsible for the rise of megalithic complex. Suffice it here to say that it was certainly not the outcome of any unilateral evolution, nor was it a product of a single migration or a movement of race.

5. Chronology

The chronology of the megalithic culture of the lower Krishna valley is not based on any firm ground. On the stratigraphical evidence of Yeleswaram and Kesarapalle we may, however, arrive at some tentative dates. A mature megalithic tradition was found interlocked, at Kesarapalle, with a culture dominated by burnished grey ware and black-and-red ware, the latter having probable central Indian association. The chalcolithic black-and-red ware might have penetrated into the lower Krishna basin sometime in the beginning of the first millennium B. C. and the combined neolithic chalcolithic tradition came in contact with the megalithic tradition by about the middle of the fifth century B. C. As indicated above these dates are derived primarily from stratigraphy, and hence, may be taken as tentative. But perhaps they are not quite off the mark as the megalithic habitation at Hallur has been dated to the first millennium B. C. on the basis of the C-14 test.[2] It may be recalled here that the megalithic habitation at Kesarapalle was associated with only buried cist comparable in many respects with those from Nagarjunakonda.

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[1] H. Sarkar, "Neolithic Pit-dwelling in India", *International Congress on Asian Archaeology, Summaries of papers*, (New Delhi, 1961), pp. 49-51.

[2] *IAR*—1965-66 (in the press). The charcoal samples TF-570 and 573 belonging to the Megalithic-Neolithic overlap phase at Hallur, District Dharwar, are dated to 1105+108 and 955 B. C.+103.

Urn-burials of this region may not be much later than the Kesarapalle cist, for seventeen pyriform urns were found under a *stūpa* near the *mahā-chaitya* at Amaravati.[1] Admittedly, the urn-burials must be quite earlier than main *stūpa* which might have come into existence along with the Asokan remains there.[2]

That none of the megalithic types are later than the third century may be adduced from the evidence at Yeleswaram where the megalithic monuments were found underlying the Ikshvaku structures. Moreover, at Kesarapalle the Rouletted ware superceded the megalithic tradition by about the first century. Thus, on the basis of available evidence we may date the mature megalithic phase in the lower Krishna valley from the middle of the fifth century B. C. to about the first century.

6. An Emerging Picture

The facts adduced so far and the results of the study of skeletal remains justify the following generalization :

1. Megalithic cists were possibly family vaults, as the number of skeletons in the megaliths of Nagarjunakonda varied from one to six. Further in many pits both male and female had been interred side by side. The same phenomenon was noticed in the Viraboyinukunta megaliths from Yeleswaram. At this site, Megalith 1 had at least one male and two female skulls, Megalith 3 containing two male and one female[3] Still clearer evidence came from Brahmagiri where Megalith 1 yielded four skulls showing "familial similarity" with one another.[4] If individual megaliths are family vaults, we may, as a corollary, take each cluster as belonging to a unit larger than a family; may be, each cluster belonged to a clan or a settlement.

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[1] A. Rea, "Excavation at Amaravati", *Annual Report of the Archaeological Survey of India*, 1908-09, p. 90.

[2] A. Ghosh and H. Sarkar, "Beginnings of Sculptural Art in South-east India : a stele from Amaravati," *Ancient India*, Nos. 20-21 (1967), p. 169.

[3] Pabitra Gupta and Pratap Chandra Dutta, "Human Remains Excavated from Megaliths at Yeleswaram, (Andhra Pradesh)", *Man in India*, 42, No. 1, (1962), pp. 19-24.

[4] S.S. Sarkar, "Human Skeletal Remains from Brahmagiri," *Bulletin of the Department of Anthropology*, IX, No. 1, (1960), pp. 5-25.

2. Variations in structural form and in the mode of disposal of the dead indicate the presence of divergent groups. That complete inhumation burial continued, though in a lesser degree alongside the post-excarnation burial in cists or jars is beyond any question. It is not unlikely that even burials in jars and pits, and the double burials were derived from earlier traditions which also contributed to the rise of the mature megalithic phase of the region. It is, however, certain that burial in cists and dolmens appeared in Indian scene quite late and might have been associated with the dominant group that succeeded in eclipsing the influences of other groups in the sphere of material culture.

3. It is beyond the scope of the present paper to trace the routes of migration or diffusion of traits but it appears that the use of cist came into the lower Krishna along with a people using the characteristic Black-and-red Ware and iron sometime in the middle of the fifth century B. C. From which direction they came it is difficult to find out without a map-picture. As the largest concentrations of megalithic cists and dolmens are to be seen in the central granitic belt—12° to 16° of latitude—we may postulate a movement from south-west to the lower Krishna valley. But urn-burials in the peninsula are mostly confined to the regions in the eastern and south-eastern coasts.

4. Structurally, Yeleswaram cists possessed many characteristic features in transepted or port-holed cists and they occurred side by side along with pit-circles and urns. Megaliths from Raigir, near Hyderabad also showed the presence of different types of burials and funerary structures side by side. All this indicates the presence of different cultural elements in an otherwise homogeneous material complex.

5. There are reasons to believe that different racial elements were present in the megalithic complex of India. Human remains from Brahmagiri included the crania of Australoid type. The most important, however, is the presence of a brachy-mesocephalic people of robust constitutions and medium stature. Human remains from Yeleswaram also showed the presence of similar brachycranial and mesocraniel skulls. All the Yeleswaram crania came from cists with their slabs protruding out on the surface. The Brahmagiri skulls on which the skeletal report is based also belonged to the cist-circles. Significantly, five crania from Raigir megaliths showed the presence

of a people with cranial index of 75, 76 and 90, and they were also recovered from cists.[1] We may possibly postulate that cists of Raigir, Yeleswaram and Brahmagiri were associated with brachy-messocranial people of foreign origin. On the other hand, the people practising urn-burials possibly belonged to another racial group, and some anthropologists have tried to connect the mesocephalic skull from Adichannallur with mesocephaly from stratum 1 of Cemetery H at Harappa.[2] The cranial indices from Adichannallur also revealed the presence of a long-headed people.

Megalithic remains are, therefore, not the product of one people: several new traits and old funerary traditions converged to give rise to a complicated pattern of mortuary constructions. Perhaps even their material culture once analysed threadbare would reveal the same trends and developments.

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[1] E. H. Hunt, *op. cit.*, p. 148-49.

[2] S.S. Sarkar, *Ancient Races of Baluchistan, Sind and Punjab*, (Calcutta, 1966), p. 91.

Megaliths in Maharashtra

S. B. Deo

The region of Maharashtra falls into two broad divisions so far as physical considerations are concerned. One to the west is a narrow coastal strip called the Konkan running north-south along the western fringes of the Sahyadris, and the second divison is the Deccan plateau, completely differing in physical set up and climatic conditions. The latter is relatively a drier region though well watered by a few perennial rivers which have contributed to the inducement of earliest human habitations in prehistoric and protohistoric times in its valleys.

It is well known that recent excavations and explorations have brought to light the remains of stone age and chalcolithic times in the valleys of the Krishna, Godavari, Tapti, Girna, Ghod, Mula, Bhima, Wardha and the Dham rivers. The chalcolithic habitations of these regions seem to fall between c. 1300 and 1,000 B. C. on C-14 showing.

However, so far as the megalithic remains in Maharashtra are concerned, the distribution appears to be rather erratic. The concentration of megalithic cairns has been most noteworthy in the Vidarbha region of Maharashtra. Hundreds of stone circles have been so far plotted. The other regions in the present state of Maharashtra appear to be devoid of large scale megalithic remains save for the few which have been noted by Sankalia and Kosambi in the district of Poona in the heart of Maharashtra. Otherwise, their distribution seems normally to concentrate somewhat on the eastern fringe of Vidarbha.

The Distribution

It thus appears that megalithic remains are mostly in Vidarbha region. So far as their locations are concerned, they may be listed as below :[1]

Nagpur District :

1. Borgaon
2. Ghorar
3. Gondi

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[1] M. G. Dikshit, *Madhyapradesh ke Puratattva ki Ruparekha,* p. 6.

4. Hingne
5. Junapani
6. Kohali
7. Koradi
8. Maharjhari
9. Nildhoa
10. Raipur
11. Sawargaon
12. Takalghat
13. Vadgaon and
14. Vathora

Bhandara District: : 1. Brambi
2. Pimpalgaon and
3. Tilanta Khairi

Chanda District : 1. Chakalpet[1]
2. Chak Vithalwada
3. Charmusi
4. Dongargaon[2]
5. Hirapur[3]
6. Kelzhar
7. Kukud Chimda
8. Ravi
9. Vagnak

Poona District : 1. Bhosari.[4]

It will thus be apparent that the megalithic remains mostly fall outside the heart of the present Maharashtra region.

Typology

The megalithic burial typology is dominantly at these places stone circles with a filling of compact clay and rubble inside the stone circles. The largest concentration of the stone circles is at Maharjhari, eight miles west of Nagpur where there are over 300 megaliths of cairn type. The next comes Junapani nearby Maharjhari in the same district which has over 150 cairn circles covering an area as much as 1/6th of a square kilometre.

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[1] *IAR*, 1958-59, p. 18.

[2] *Ibid*, 1960-61, p. 24.

[3] *Idid*, 1963-64, p. 39.

[4] *BDCRI*, 1939–40, pp. 178 ff.

Besides the cairn circles, the megalithic remains are represented by other types as well. For instance, at Pimpalgaon. Tilanta Khairi and Brambi, all in Bhandara district, cromleches are reported, as also at Kelzhar in Chanda district. There is a dolmen at Pimpalgaon.[1]

At Bhosari, about eight miles north of Poona on the Poona-Nasik road, several stone circles were noted along with three dolmens and two menhirs. Thus, the Poona region, though rather an isolated example of megalithism, possesses three types, whereas the Vidarbha region has mostly stone circles.

Besides Bhosari, menhirs have also been reported near Ravi in the Garchiroli taluk of Chanda district.

The dimensional pecularities of these various types are available only in a few cases. As stated above, Sankalia has given all the details regarding the Bhosari monuments, whereas general descriptions are available in the case of Junapani and Maharjhari stone circles.

At Junapani,[2] the stone circles are of unpressed trap boulders ranging in diameter between 7 to 18 metres. At Maharjhari,[3] the cairns measure in diameter 29 to 60 ft N-S and 34 to 39 ft. EW., and the average height of cairn filling above the ground level was 3 ft. The same feature was noticed at Junapani also and the filling was of black sticky clay with rubble packing in the centre. The excavator further points out that there were "shallow cup-marks on some selected circle stones...similar to those on barrows in Great Britain."

The stone circles at Bhosari near Poona are stated to be polygonal with 65 ft. diagonal, whereas those roundish have a diameter of 7 ft. One of the dolmens was 2′×9″ broad, 2′ 6″ high and 1′ 10″ deep. The Capstones of these measured 3′ 2″×4′ 7″; 4′ 5″×2′ 7″ and 5′ 5″ and 3′ 1″. The couple of menhirs encountered there were 4′ 8″ and 8′ 8″ in height and the circumference varied between 4′ and 3′ 2″. It is further stated that in one of these was kept an image of the god Ghedoba.

Work done

Inspite of such copious evidence, though not well distributed, only a few of these sites have been scientifically tapped so far.

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1. Dikshit, M. G., *op. cit:* pl. 3.
2. *IAR*, 1961-62, pp. 32-34.
3. *Ibid.* 1958-59, pp. 21-22.

Major Pears and Hislop excavated a few stone circles in the Vidarbha region. Pears in 1867 tapped a few stone circles at Vadgaon,[1] two miles east of Kamptee near Nagpur, while in the same year "some half a dozen barrows were explored" at Junapani.[2] A popular account of the finds from Maharjhari, 16 miles from Nagpur, has been published by Hunter.[6] A detailed and systematic account of the remains at Bhosari has been published by Sankalia[4] which gives a fair idea of the magnitude of the remains there.

Excavations and Explorations

Surface explorations have given typically megalithic Black-and-red pottery recently at Ranjala in the Dhulia district.[5] So far as the find of the megalithic Black-and-red ware is concerned, it has been found associated with human burials at Tekwada which is equated with phase I B of Bahal by the excavator. Here, this ware bore graffiti and was found with Grey ware. The excavations at Kaundanpur,[6] district Amaravati, yielded "black-and-red" "gritt-tempered wares" having mostly "vases with flaring rims." No painted pottery was encountered with this, but the excavator speaks of etched beads with megalithic decorative patterns, on the basis of which possibly, the excavator designates this period as belonging to "megalithic culture" (?).

The only purely megalithic site excavated so far in Maharashtra is Junapani near Nagpur. The Archaeological Survey of India excavated it in 1961-62 prior to that, extensive explorations were done at Maharjgari by the ASI which yielded "a large number of finished and unfinished beads of agate, jasper, quatz", having different shapes like "bicone, truncated bicone. barrel, hexagonal, spherical, plano-convex, disc and multifaceted.[7]"

Excavated Evidence

The excavated evidence as published in a summary form may now be stated. As stated earlier, so far as Maharashtra region is concerned, excavations have been done scientifically only at Junapani. Here three megaliths were excavated. As referred to earlier, in all these stone circles, in the centre was heaped sticky black clay and within this domical filling were arranged funerary deposits. There was also rubble packing in the centre.[1]

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[1] M.G. Dikshit, *loc. cit.*

[2] *IAR*,1961-62, p. 32

[3] Sharadashrama, Varshik, pp. 30-35 as quoted by Dikshit.

[4] Sankalia, *loc. cit.*

[5] *IAR*, 1960-61. p. 24.

[6] *Ibid*, pp. 29-30.

[7] *IAR*, 1958-59, pp. 21-22.

"Megalith—I had a diameter of 15 m. In the northern half of the circle was an irregular shallow pit measuring 8.80 by 3.50 metres. On the floor of the pit as also in the clay filling were found funerary deposits like pottery, iron objects, gold ornaments and a stone pestle. Two of the three ancillary pits in the southern half of the stone circle yielded human and animal skeletal remains. The former comprised crushed skull and some long bones, while in the latter category were recovered bones of Equidae family. Besides a few badly crushed pots, forty-four carnelian beads, 24 of these etched, were found.

The pecularity of Megalith—II was that it had a double circle of untrimmed boulders arranged in a external diameter of 10.21 metres. Except the remains of a crushed pot, no other finds are reported from the cairn.

Megalith—III had a diameter of 16 m. Below the clay heap were found pottery, gold ornaments, a silver stud, copper and iron objects, human skeletal remains with a gold bangle and spiral ring on it. The skeletal remains were essentially fragmentary.

Material Culture

The material equipment of the people who were assoicated with megalithism in Maharashtra, has yet to be attested fully, as the excavated evidence is yet insufficient. Moreover, the published evidence is yet in the form of summary notices which present an incomplete picture. However, on the basis of the published accounts, it appears that the people used quite a variety of objects.

The pottery encountered in the stone circles at Junapani comprised four fabrics, to wit, Black-and-Red, all Black, plain Red, and a Ware tempered with micaceous gritt. Unfortunately the pots were so badly crushed that no shape could be restored. At Kaundanpur the excavator refers to the occurrence of Black-and-Red grit tempered wares which gave mostly vases with flaring rims. At Tekwada which can be equated with Phase IB of Bahal, pit burials gave Black-and-

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[1] Summarised from *IAR*, 1961-62, pp. 32-34.

Red ware with paintings in white and graffiti.[1] The shapes represented are mostly rimless bowls, either with carination or without it. The graffiti contains, among others, the motifs of a ladder and a tree branch.[2]

Typical megalithic shapes in the Black-and-Red have been reported from Ranjala in Khandesh.[3] They comprise shapes similar to these from Tekwada and bear graffiti marks which appear to be mostly groups of lines. Besides the carinated shapes, Ranjala also illustrates possibly stands and a shallow dish-cum-cover.

The associated ceramic industries with the megalithic Black-and Red are not much attested. For instance, at Junapani, along with the Black-and-Red, three other ceramic industries were found. They were as stated earlier, all black, plain red and a ware tempered with micaceous grit. The relative occurrence of these is not known nor are any shapes mentioned. Similar is the case of the Black-and-Red at Kaundanpur. There is a mention of "vases with flaring rims" in the grit-tempered wares, but the shapes of the Black-and-Red are neither described nor illustrated. At Tekwada on the other hand, one of the urn burials contained "five bowls of black-and-red colour", whereas the pit burial had "a pot of five-grey ware and the other of painted black-and-red ware." Apart from the Grey Ware, the pit burial also contained" a globular vessel of red-slipped ware bearing paintings in black curvilinear lines forming a shell pattern and joined together by a band and with six oblique strokes at the top of each curved loop." It may be stated that the shape and the design, described is quite common to the chalcolithic Jorwe ware at Nevasa[3] and Jorwe. Thus the excavator points out, on the ceramic associations of the burials at Tekwada and those of the habitations of phase IB at Bahal, "the contemporaneity of the burials with period IB of the chalcolithic culture of Bahal".

The other associated equipment of the megalithic people as revealed in the excavations in Maharashtra is of a limited nature, apparently because of limited tappings done so far. It will be agreed that inspite of the contemporaneity of the Tekwada burials and the chalcolithic habitation of Bahal IB, the entire material equipment of

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[1] *IAR*, 1956-67, pp. 18-19, Fig. 8.

[2] Ibid, 1960-61, pl. XXXIII, B.

[3] Sankalia et al, *From History to Prehistory at Nevasa*, T. 3, a, Fig. 90, p. 222; Fig. 108, Design XXVIII, p. 248; Sankalia and Deo, *Excavations at Nasik and Jorwe*, Fig. 61, No. 4.

Bahal IB as evidenced by Malwa pottery, terracotta combs and bones and copper lump, cannot be assigned to the megalithic complex as evidenced in the Tekwada burials. Therefore, we are left only with the equipment as excavated in the Junapani stone circles, and that collected on surface at Maharjhari and associated with the "megalithic culture (?)" at Kaundanpur.

The Junapani evidence attests to the use of a variety of iron implements and the excavator designates Junapani as "iron-using culture". Though the entire evidence is not yet published, it appears that the Junapani megalithic people used swords, daggers, spears and lances.[1] The sword appears to have a long parallel-sided blade and a short hilt. The axe with convex ends had a cross-ring fastener. The exact nature of spears and lances cannot be made out. The dagger, however, appears to be a miniature sword as its shape shows.[2] Besides these, Junapani also gave "chisel-shaped implement".

The domestic equipment made of iron comprised a ladle with a long rod handle and with a shallow cup at the end. Besides this, Junapani also gave a sandstone pestle[3], bulbous at one end and thinner at the other.

These people, however, seem to have produced a variety of ornaments. They were necklaces, annular disks with two perforations and having short incisions at the periphery,[4] spiral ring and "a bangle made of fine disks threaded on a copper wire with hooked ends." Besides such elaborate gold ornaments, the megalithic people of Maharashtra seem to have a predilection for beads of semi-precious stones. Kaundanpur and Maharjhari have given numerous beads. At Junapani, megalith I is reported to have yielded 44 carnelian beads of which 24 are etched. At Kaundanpur etched beads with megalithic decorative patterns, viz. "short radial strokes on circular-lenticular beads and wavy bands between marginal lines or long barrel circular beads" known from several south Indian megalithic tombs[5] were found in Period I. At Maharjhari, large number of variously shaped beads of agate, jasper and quartz have been reported. Besides the ornaments of gold and beads of semi-precious stones the use of copper anklets was also attested at Junapani.

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1. *IAR*, 1961-62, pl. LV, A.
2. Ibid, pl. LIV, A.
3. Ibid, pl. LV, B.
4. *IAR*, 1961-62, p. 29.

So far as the other material equipment is concerned, we have scanty equipment. The only noteworthy item is the find of a copper bell with an iron tongue from Junapani.[1]

Culture contacts

The material equipment associated with megalithic tombs in Maharashtra gives indications of culture contacts with other cultures and regions. For instance, it is well-known that there are numerous megalithic tombs in the regions close to the north, east and south of Maharashtra. Secondly, the repertoire of iron objects found at Junapani has close parallels from South Indian megaliths.[2] For instance, Thapar points out that some of the iron objects found at Junapani compare favourably with those reported from Adichanallur. Besides Adichanallur, some iron objects from Brahmagiri[3] megaliths also bear resemblance with those found at Junapani.

The ceramic evidence points to contacts with South Indian megaliths. At Tekwada, a typical Jorwe pot was found associated with the burial which contained unmistakably megalithic typology in the black-and-red.[4]

The third category pertains to etched beads as referred to earlier. The etched beads found at Junapani and in the "megalithic cultural" levels of Period I at Kaundanpur again establish cultural contacts with South Indian megalithic tradition.

Thus the Maharashtra megalithic evidence shows contacts with the south and with the Khandesh chalcolithic, and as such, cannot be studied in isolation. So far as megalithic architectural typology is concerned, the Maharashtra region is dominated mostly by cairn type. However, this statement may have to be modified, if these tombs are excavated on a large scale.

Ethnic comparisons and contacts are impossible as there is so far no data available from Maharashtra sites.

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[1] Ibid, pl. LVI, B.

[2] See *Indian Prehistory :* 1964, p. 179.

[3] *Anc. Ind.*, No. 4, pp. 181 ff.

[4] Cf. Tekwada, *IAR.* 1956-57, p. 19, Fig. 8 and Brahmagiri, *Anc. Ind.*, No. 4 Fig. 24, Types 97, 98, 99.

Dating

Wheeler[1] dated the megalithic culture at Brahmagiri to about the 3rd-2nd cent. B. C. This dating is no longer valid, as with the passage of time, new data in relatively well-dated horizons has helped to propose much earlier dates. Moreover, some C-14 dates are available for the megalithic culture in Karnaṭak as well.

Junapani and Maharjhari being single culture sites, do not help much in this reconsideration of dates. At Tekwada where megalithic pottery was found associated with a Jorwe pot, the dating can be pushed back at least to the earlier half of the first millennium B.C. as the C-14 dates for Jorwe culture at Nevasa and Chandoli range between 1,300 and 1,100 B.C. Tekwada, which is contemporaneous with Bahal IB, could be dated prior to C. 600 B.C., as in 600 B.C. Period II of occupation begins. Similar is the case with Kaundanpur. Here Period I of Megalithic culture is capped by Period II in which the Black-and-Red continues and the horizons of which show a sterile flood deposit. Period II is capped by the deposits of Period III which could be dated on the basis of the occurrence of the NBP. Thus the relative date of Period I could be much earlier.

In addition to this, C-14 date for megalithic culture has been available recently from the Mysore region. For instance, C-14 dates for Hallur, Distt. Dharwar, megalithic-neolithic come to 1,105 B.C. and 955 B.C.[2] In the light of this, it appears that the megalithic remains in Maharashtra have to be assigned to at least the beginning of the first millennium B.C., if not earlier.

The People

It is not possible to say who these people were who contributed to the creation of megalithic tombs. As stated earlier, no scientific study of the human skeletal remains has yet been made.

Sankalia,[3] however, refers to the practice of using the dolmens as the shrine of a local deity called Chedobā by the local people in Bhosari near Poona. In this connection, he further states that "Even today Kurumbhars, a shepherd caste, bury their dead in a dolmen-like tomb, inside which are placed round stones, painted with Sindura."

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[1] *Anc. Ind.*, No. 4, p. 201.

[2] *IAR*, 1965-66, Typescript (TF 570 and TF 573).

[3] Sankalia, H. D., *BDCRI*, 1939-40, p. 184.

It is apparent from the foregoing account that megalithism in Maharashtra cannot be considered in isolation. At best it may be stated that it came to be in Maharashtra, as in the adjoining regions, possibly at the hands of nomadic metal-smelting communities whose habitational pattern is not yet fully known.

Megalithic Culture of Orissa

K. C. Tripathy

Introduction

The term 'megalithic' was originally introduced by antiquaries to describe a fairly, easily definable class of monuments consisting of huge undressed stones and termed in celtic dolmens, cromlechs and menhirs. It has subsequently been extended to cover a far more miscellaneous collection of erections. By etymology 'megalithic' means the magnitude (megathos) and the stones (lithoi). The basis of classification of megaliths is not merely material, or magnitude but also functional. The function is the proper basis for classification in a science that aims at classifying human societies. But this particular sort of function can never be completely known in case of extinct and preliterate societies and such were the societies by which all or nearly all the monuments originally classed as 'megalithic' were erected. However, for the exact knowledge of function archaeologists have had to appeal to complex of traits regularly associated with monuments concerned.

One of the main problems of Indian Archaeology to-day is in respect of the megaliths, the burial tombs in which large sized stones were variously used. The problem relates to, who were the megalithic folk, when they came, the mode of burial involved and the dates of their emergence and disappearance. Until 1944, the subject of megaliths had been sporadically studied and there had been no systematic attempt to make a complete note of their features, contents and distribution with a view to classifying them typologically and arriving even at tentative conclusion regarding their use. Since then a regular survey of megalithic monuments and sites was taken up by the Archaeological Survey of India and the three regions have been submitted to detailed ground survey in south India. The prehistoric materials belonging to common megalithic complex are so varied in type that it is necessary to know the details of their features while evolving anything about a provisional terminology and other aspects of the megalithic culture of India.

Megalithic Type in North-East India

In the region of North-East India evidences of a living megalithic culture has been noticed which is found to exit among the tribes of Assam, Chotanagpur, Bastar and Orissa. The culture at present is ramdom with superstitious rituals and taboos and the megalithic monuments are being gradually replaced by wooden counterparts. The megalithic monuments erected by tribes of north-east India are commemorative rather than sepulchral and they have lost their funerary significance by getting associated with unrelated memorial feasts known as 'gota mela'.

Among the Maria Gonds of Bastar, the Oraons and Mundas of Chotanagpur and the Nagas and Khasis in Assam, the megalithic characters exhibit an essential unity and they are diverse in rituals due apparently to the influences of Austro-Asiatic and in a lesser degree Dravidian. The monuments include menhirs, and their alignments, dolmens, stone circles, stone seats and cromlechs. Among the Maria Gonds of Bastar the menhirs and their alignments are known as *Uraskal* and the dolmens or table stones are called *Danyakals* which consists of a flat stone over the supporting boulders. The most common subsitute in the present day among the Bastar Maria for the *Uraskal* is either a cairn of stones with a flat cap-stone on top called the *Marmakal* or the wooden pillar at the top of which are carved representation of birds. This indicates how the megalithic monuments associated with the Indian aborigines are undergoing a faster modification and gradually loosing the ritual significance.

Orissa: A locality in North-East India

So far as Orissa is concerned, we find that this state like many other states in India, is thickly inhabited by aborigines and evidences show that it was inhabited by prehistoric men who lived, flourished and died in this land and have left behind their non-perishable artifacts of stone. The occurrence of lithic implements of prehistoric types have been reported since 1876 by V. Ball. But this important discovery did not inspire any one for serious research until P. Acharya and E. C. Worman discovered the famous lower palaeolithic site at Kuliana in the district of Mayurbhanj, in 1939. Since then the northern part of the state has been systematically and scientifically studied by Acharya, Bose, Mohapatra and Sen. In spite of above facts, it should be mentioned that southern part of the state has remained unexplored. The report about the prehistory of this area is very inadequate and practically nothing except the recent exploration work made by Tripathy in the district of Koraput is known.

As regards the megalithic culture of Orissa, it is a living local culture mainly practised by the tribes like the Gadaba, Bondo and Mundas who are distributed in the districts of Koraput and Keonjhar respectively. A detailed study of the megalithic ritual among the Gadaba and Bondos of Orissa has been made by Haimendorf. But the affinity of this living megalithic culture of aboriginal tribes of Orissa associated with prehistoric antiquities is not yet known. It should he further mentioned that the neighbouring area of the district of Koraput where the Gadaba and Bondos inhabit has been investigated and several microlithic and megalithic sites have been located on the bank of the river Godavari and Savari in the East Godavari district of Andhra Pradesh. Accounting these discoveries in the neighbourhood, one can very well expect to find the similar type of pre and proto-historic culture sequence in the district of Koraput of Orissa and the hypothesis gains strength when we find the foundation of the living megalithic culture of the Neolithic period associated with the aboriginal tribes. The following table presents the brief details of the tribes of Orissa who are associated with a living megalithic culture and also show the affiliation among themselves :—

Name of the Tribe	Distribution	Occupation	Total Population	Ethnic Stock	Linguistic Family
Munda	Sambalpur. Bamra, Mayurbhanj, Gangpur (North Orissa)	Permanent cultivation	63,281	Proto-Austra-loid	Austric
Gadaba	Koraput (South Orissa)	—do—	34,315	—do— (with a little Negrito element)	—do—
Bondo	—do—	Hunting, Food gathering, shifting Cultivation and settled cultivation.	8,000	Proto-Austra-loid.	—do—

Megalithic Types from Orissa

At present it is not known with certainty whether a true megalithic culture was associated with the erections of various types of stone monuments as sepulchres containing iron implements of same antiquity also occurs in Orissa as in south India. But the aboriginal tribes of Orissa namely the Bondos and the Gadabas have a living megalithic culture like the tribes of Assam, Chotanagpur and Bastar. The megalithic types of the Gadabas and Bondos are commonly known as Sindibor (stone circles), Gunom (dolmen) and some other groups of stone-seats comprising some menhirs. They are usually under the village trees and they are known as 'Sodor'. The Gadabas mean Sodor and Sindibor as merely congregation of memorial stones while the Bondos look upon them as the seats of the earth deity so necessary for the promotion of fertility. But the monuments mainly connected with these tribes are commemorative in nature rather than connected with graves.

However, while reviving the evidences of living megalithic culture of the aboriginal tribes of Orissa, it is essential to know their ethnic status and geographical distribution in order to evaluate the degree of inter-relationship and pattern of diffusion. According to Haimendorf the megalithic types of these two tribes of Orissa belong undoubtly to southeast Asiatic type (inclusive of Austro-Asiatic and Austronesian cultural influence). According to him the essential element of the megalithic culture of Assam, Chotanagpur and Orissa which belong to the South-East Asiatic type must have developed and moved with the Austronesian migration in the movement of the Austro-Asiatic races west-ward into peninsular India.

In Orissa the aboriginal tribes associated with the megalithic funerary practices are found in the district of Koraput in the south Orissa and also in the north Orissa. There are other reports about the cultural practices but the materials are inadequate and the informations are unauthorized. However, the tribes like the Gadaba and Bondos are distributed in a particular geographical area where they have extensive socio-cultural inter-actions. The primitive status of the tribes are mainly due to the fact that the entire area is mostly covered with inaccessible hills and dense forests rendering communications with rest of the country extremely difficult.

Besides the tribes belong to the linguistic family Austric, but they are slightly different in their ethnic composition. The Gadaba and Bondos though belong to the proto-Australoid ethnic stock but the former one indicates some Negrito physical traits, which still should be established be accurate scientific investigations and analysis. The Munda on the other hand is Austric and proto-Australoid in ethnic composition. Detailed scientific excavation of these megaliths commonly met with these tribes is necessary, in order to correlate the megalithic culture of Orissa with the other areas with appropriate chronology and antiquity.

It has been further stated that the combined ethnological and archaeological evidences leave no doubt that the migration of megalithic folks occurred in Neolithic times. This has been shown by the clear co-ordination in India of the distribution of the shouldered polished celts and Austro-Asiatic languages. The Austronesians, therefore are said to have been responsible for the highly developed Neolithic civilization characterized by the long polished celts with quadrangular sections observed in peninsula as far south as the Godavari.

While looking at the pattern of distribution of Neolithic culture of Orissa and occurrence of shouldered celts, it has been only reported from the districts of Cuttack, Puri and Mayurbhanj where no trace of megalithic culture has been reported. Therefore a chronological similarity of the emergence of the megalithic culture with the shoulderod celt types of neolithic phase can not be established at present in Orissa due to inadequate field data.

Thus summarizing the main features of megalithic monuments and the megalithic culture of Orissa, it may be presumed that they are the memorials often connected with graves. The chronological status of the culture is very difficult to determine as no detail work has been done supportcd by scientific excavations. Further, the prehistory of the area where the megalithic monuments are commonly found, is still unexplored. So the similarity of the living megalithic culture of Orissa with subsequent phases may be absolutely inaccurate and unscientific. However, excavations of megalithic monuments and a comparative study of their typology and other associated materials are likely to throw some light on the megalithic problem of eastern India.

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Megaliths in Hoshangabad, Narsinghpur and Jabalpur districts of Mahakoshala region

Baijnath Sharma

Western archaeologists introduced the term 'megaliths' "to describe a fairly easily definable class of monumants in Western and Northern Europe, consisting of huge undressed stones and termed in Celtic dolmens, Cromlechs and menhirs".[1] Now it covers "a far more miscellaneous collection of erections and even excavations".[2]

The study of megaliths in India is one of the recent problems in the field of pre-history and field archaeology. In the beginning the study of megaliths was of casual nature and it continued so till the early forties. Perhaps Fergusson was first to draw our attention to the megaliths in Southern India. He was followed by Jagor, Rea and Louis Lapique. In 1882 Sewell recommended that an intensive exploration work should be taken up. Sewell's recommendations were translated into action after about half a century when the systematic study of megaliths—their distribution, classification, authorship, chronology and several other problems and features connected with megalithic monuments was taken up by the Archaeological Survey of India in 1944.[3]

In the intial stages it was believed that "peninsular India marked the bounds of the distribution of megalithic monuments."[4] But recent explorations and surveys conducted by the Archaeological Survey of India, several Universities and Research Institutes have discovered their wide distribution all over India. The University of Allahabad explored several sites and found out hundreds of megalithic monuments in several districts of Uttar Pradesh mainly Allahabad, Varanasi and Mirzapur. The Banaras Hindu University also made similar attempts and got the traces of megalithic culture in this region.

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[1] V. Gordon Childe, "Megaliths" *Ancient India*, No. 4, p. 5.

[2] Ibid., p. 5.

[3] N. R. Banerjee, Ibid., No. 12, p. 21.

[4] Ibid., p. 4; Gordon, *Prehistoric Background of Indian Culture.*

In this paper I want to draw the attention of explorers, excavators and archaeologists to several megalithic monuments in Jabalpur, Narsinghpur and Hoshangabad districts of the Mahakoshal region of Madhya Pradesh. As far as I know no prehistoric and archaeological exploration and survey of this region has been made on systematic lines. Some archaeologists of the Archaeological Survey of India, the Deccan College Postgraduate and Research Institute, Poona and other independent researchers and explorers have done commendable work to throw light on the pre-history and archaeology of this region.

Recently Dr. A.P. Khatri surveyed this region along Narmada river between Hoshangabad and Bheraghat. Dr. G.J. Wainwright and Shri S.C. Malik conducted the survey of the Narmada from Maheshwar to Jabalpur. Shri C.B. Trivedi, Shri M.V.N. Krishna Rao and Shri B.P. Bopardikar of the Archaeological Survey of India and Dr. H.D. Sankalia, Shri S.G. Supekar, Dr. S.B. Deo, Shri Nisar Ahmed of the Deccan College and Prof. K.D. Bajpai of the University of Sagar also explored and excavated some sites in this region and brought to light some very important finds of pre-historic and proto-historic times. But as far as I know no light is thrown on the megaliths of this region.

These three districts of the Mahakoshal region, like several others, are noted for their hills and river valley. The Satpura and the Vindhya mountains encircle the entire area starting from the Kaimūr ranges and reaching to Hoshangabad and Handia where the hills come down very close to the Narmada river. The Narmada flows in the entire region. Emerging from the beautiful marble rocks at Bheraghat it flows towards the west through fertile alluvial lands till it reaches Handia after covering a distance of nearly four hundred kilometres. Its important tributaries, the Śakkar, the Sītārevā, the Umar, the Ánjan, the Ola, the Dudhī, the Denwā, the Tavā and several other small streams are famous for the river valleys. In the hilly areas of these river valleys I have noticed several megalithic monuments. Before I proceed further I may add that my study of these megalithic monuments is not a result of systematic exploration. It is just by the way. The megalithic monuments abound in this region and I have seen a very large number of them at following tracks :—

1. Areas around Madan Mahal hills near Jabalpur.
2. Hilly areas near Bheraghat.

Both these tracks are in Jabalpur district.

3. Track between Piparia and Pachmarhī. The places in this track, I have seen with a very large number of megaliths, are in the Denva valley (near Maṭkulī, Singānāmā and Pachmarhi.)
4. Between Pachmarhī and Barā Mahādeo and between Barā Mahādeo and Chaurā.
5. Near Tamia.

The megalithic monuments noticed here can be classified into following categories :—

1. Menhirs. They are found almost all over the places as referred to above.
2. Stone-circle. They are found near Madan Mahal hills, Tāmiā and Maṭkulī.
3. Stone-seats abound at Pachmarhī and adjoining areas.
4. Hood-stone. Three or four monuments are noticed near Tamia and one near Chaurā.
5. Dolmens. Nearly six sites are noticed near Maṭkulī and Tamia.
6. Cairns. Thee sites are near Tamia.
7. Cairn-circles. There is one at Maṭkulī and two near Tamia.
8. Rock-cut caves are found near Pachmarhī. They are in addition to several rock-shelters with primitive paintings at Pachmarhī noticed by several explorers and archaeologists notably Hunter and Gordon Childe.

Of the other types such as hat-stones. alignments, avenues, barrows and cists have not been noticed so far. Only one example of a dolmenoid cist was noticed in the vicinity of Tamia rest house.

This is just the casual study of the megaliths in the region under review sporadically made. What we need is the systematic exploration of the area and I hope the indefatigable teams of the Archaeological Survey of India and the various Universities shall find time to visit these remote places and will rehabilitate this region on the megalithic map of India.

Megaliths of North-Western India

Purushottam Singh

It is now almost a century ago when Alexander Cunningham reported the occurrence of cromlechs, cairns and stone circles "in the hilly parts of the districts of Delhi, Mirzapur and Orissa".[1] Subsequent explorations by several scholars has now confirmed that barring Delhi and Orissa, megalithic graves have been reported from different regions in northern and north-western India. In north-western India, these have been reported from five zones : viz. (A) The Aravallis Range, (B) the-Himalayan foot hills, (C) the Kashmir region, (D) Sind and (E) Baluchistan. A detailed survey of the nature and contents of these monuments has been presented in the following pages :—

(A) The Aravallis Range

In the Aravallis range, cairns, cromlechs and menhirs have been reported from Daosa, Satmas and Khera, besides some cinerary urns at the base of a rock at Bairat and an aboriginal tomb at Machari. Again, some stone circles have been located at Kuchera near Nagaur. Of these, the megalithic graves of the first three sites are better known as some of them were excavated by Carlleyle who has given details about the nature and contents of these graves.

The first group of seven cairns were located by Carlleyle at the slope of a hill near the village of Khera,[2] about 4 miles west of Fatehpur Sikri. These have been typologically divided into two categories : viz. (1) round topped cairns and flat-topped cairns. Two cairns of the first category were opened by Carlleyle who found a shallow oblong trough - shaped cavity excavated in the solid rock of the hill. The cavity contained fine yellowish sand 'foreign to the locality.' Below this layer were found the ashes of calcined bones mixed with earth and a few small fragments of charred wood.

In the flat topped cairn, a small square chamber was found. This chamber was filled with stone rubble and grey dust of calcined bones mixed with earth and small atoms of charcoal.

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[1] Alexander Cunningham, *Rep. Arch. Surv. Ind.* Vol. I (Simla : 1871), Introduction, pp. XXX-XXXI.

[2] A.C.L. Carlleyle, "Report on a tour in east Rajputana in 1871-72 and 1872-73" *Rep. Arch. Surv. Ind.* VI, (1878), p. 13.

The next megalithic site having more than thirty cairns was located by Carlleyle at Satmas,[1] situated on the slope of a hill some two miles north-east of Jagner. The cairns of Satmas are typologically divisible into three categories: (i) Round topped or tumulus shaped solid cairns, (ii) Flat-topped four sided cairns and (iii) cromlech cairns.

These three types of cairns differed in their size as well as in the methods of construction. The round--topped cairns measured 10 to 12 ft. in diameter. The chamber in the interior of the cairns was very small. The mean diameter of cromlech cairns was 6′ 6″ x 4′ to 5′. These were 4′ 6″ in height. Thus while flat-topped cairns yielded only small atoms of bones mixed with ashes, the round topped cairns and cromlechs yielded a few fragments of bones *in situ*. Thus it may be presumed that post-cremation burial as well as fractional burial was in vogue at this place.

The third megalithic site of considerable importance is Deosa[2] (Daosa) situated about 32 miles east of Jaipur on Jaipur-Agra road. The megaliths at this site were located on the eastern slope of a hillock and also to the north-east of Daosa village Besides, a rude stone monolith measuring 15′ × 4 ′ × 2′ was seen to the north-west of the same village. These megaliths are typologically divisible in three categories : (i) Stone circle with a cromlech or menhir in the centre, (ii) cairns, (iii) Rude monolith. The cairns situated to the north-east of Daosa village were opened by Carlleyle who found a few fragments of human bones and a little charcoal and ashes, thus establishing the sepulchral nature of these cairns. Besides, these cairns also yielded a stone knife or dagger, a rude borer-like implement and a stone ball. Again, some stone circles were seen at Kuchera[3] near Nagaur but their association with the cult of the dead is yet to be established.

Here, it may be recorded that the present author had an opportunity of exploring the three megalithic sites in the Aravallis. The

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1. A.C L. Carlleyle, "Report on Agra" *Rep. Arch. Surv. Ind.* IV, (Calcutta : 1873), pp. 213-214. Also Carlleyle in *Rep. Arch. Surv. Ind.* VI, (Calcutta :1878), pp. 33-39.

2. A.C.L. Carlleyle, *Ibid.*

3. H.B W. Garrick, "Report of a Tour in Punjab and Rajputana in 1833-34" *Rep. Arch. Surv. Ind.* XXII, (1887), pp. 49-50.

megaliths on all these places are still there but most of them have now been disturbed as the sites are being quarried by the local villagers for ballast. The present author located a habitation-site at Daosa wherefrom crude red ware sherds were picked up. Besides, the megaliths at Satmas also include a new type which seems to have been a small rectangular enclosure or chamber. There is no lithic appandage over it.

Besides some cinerary urns[1] containing human bones were excavated at a depth of 3′ at the base of two large boulders in front of the rock bearing the Asokan inscription at Bairat. Further, a solitary aboriginal tomb was seen by Carlleyle on the summit of a lofty range of hill at Machari (Machadi),[2] situated about 22 miles to the south of Alwar. This tomb contained human bones, ashes, a stone ball and a few stone flakes, Here, it may be observed that similar antiquities were also recovered from the cairns at Daosa.

B. Himalayan Foot Hills

The earliest known 'megaliths' in this region are those at Deodhoora[3] in Almora district. Henwood reported small granite and slate cromlechs from this place. According to him, these cromlechs were used as shrines. Since then, no systematic work has been done on this site and the exact nature of these cromlechs remains to be ascertained. Again, some 'cup-marks' and sculpturing similar to those found on monoliths and rocks in Europe, were noticed by Revett Carnac[4] on a rock near the Chandeswar temple, about 2½ miles south of Dwarahath in Kumaon. These 'cup-marks' vary from 6″ to 1½″ in diameter and 1″ to ½″ in depth.

But the most noteworthy megalithic graves of this region are some burial cists reported from the Kinnaur region and Leh in Ladakh. In Kinnaur region some cist-graves were found by Mahapandit Rahul Sankrityayan at Lippa (Liting),[5] Kanam, Spu and Namgya villages in Chini area. In course of his journey in this region in 1948,

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1. A.C L. Carlleyle, *Rep. Arch. Sur v.Ind.* VI, (Calcutta : 1878), pp. 100-101.
2. A.C.L. Carlleyle, Ibid, pp. 88-89.
3. Referred by Wheeler in *Ancient India*, No. 4, p. 302.
4. H. Revett-Carnac, "Rough Notes on Some Ancient Sculpturings on Rocks in Kumaon, similar to those found on Monoliths and Rocks in Europe", *JASB*, XLVI, Pt. I, (1877), pp. 1-15.
5. Mahapandit Rahul Sankrityayan, *Kinner Desh*, (Hindi Text), (Allahabad : 1957), pp. 295-299.

he found human bones buried in a cist measuring 4½′×2½′×1½′ and covered by a stone slab at the first named village. Inside the cist, the bones were thrown in haphazard manner. The cist yielded part of a dolichocephalic human skull which pointed towards the west. The grave-goods included a bronze bowl and an earthenware spouted vessel. Local people believe that these are Muslim graves. But according to Rahul, the dolicocephaly of the skull and the grave-goods indicate that the graves are quite early. The mode of the disposal of the dead also indicates that the people had not come in contact with Buddhism and its doctrine, of *Karma*. Thus Rahul believes that the graves are pre-Buddhist and are not later than 8th century A. D. As will be seen below, the same date has been ascribed by shaw, to the cairns of this region.

The burial-cists of Leh[1] were located 3 ft. below the ground surface at a place two miles above the Commissioners' compound. The cists are made of rough unhewn stone-slabs of rectangular shape and measured 6 ft. × 4½ ft. and were dug 6 ft. deep. In his excavation of these graves in 1903 and 1909, Francke found hand-made earthenware pots of various shapes filled with human bones. He believed that the corpse had been cut to pieces before these could be filled in pots. Nearly 15 to 20 skulls were found in one grave alone. Skulls of sheep and horns of an ox found from these graves presumbaly represented gift to the deceased. Metal objects in the graves included objects of bronze, iron and gold. Since all the skulls are dolichocephalic, the excavator feels that these represent the remains of Dards who came from the Gilgit region in first few centuries of the Christian era. Here, it may also be pointed out that burial in a regular cemetery is the common mode of interment among the Dards[2] of Kashmir and Gilgit region.

Further, some cairns have been found at several places in Dhoala Dhar, rocky valleys of Tibet and Kuenlun mountains. Shaw[3] believes that these cairns are not related to Buddhism and these are the remains of an early kind of worship anterior to Buddhism.

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[1] A.H. Francke in *Arch. Surv. Ind. Ann. Rep.*, 1909-10, (Calcutta : 1914), pp. 104-106.

[2] G.W. Leitner, "Manners and Customs of the Dards", *Indian Antiquary*, I, (1872), p. 11.

[3] R.B. Shaw, "Religious Cairns of the Himalayan region" *Rep. British Association for the Advancement of Science, Transactions*, (1872), pp. 194-197.

C. Kashmir

The earliest known megaliths of Jammu and Kashmir State are a group of eleven menhirs at Burzahom, 24 kms. N. N. E. of Srinagar. These were visited by Rybot[1] in 1914 who made two sketches of these monuments and published a short note. Working on this site, H. De Terra[2] tried to ascertain the nature of these menhirs. Recently, the site has been excavated by the Archaeological Survey of India.[3] The massive rude stones of which only six are in position now, were erected towards the end of the neolithic period. These form a semi-circle. The purpose of erecting these menhirs is not clear. The pottery associated with these monuments is red ware in which miniature vases pre-dominate. It has been argued that the latter were intended for ritualistic purpose. A few specimens of black-burnished ware, a few stone axes and bone tools were also found in this deposit indicating some sort of overlap between the megalithic and the preceding neolithic culture. A burial[4] of megalithic phase was also found. Thus it is clear that these menhirs are connected with the cult of the dead. Besides, two other megalithic sites having menhirs were also located by Rybot.[5] Of these, one was noticed at at Shadipur, 10 miles downstream from Srinagar and another in the neighbourhood of the latter place. Menhirs of Burzahom type have recently been located at four sites,[6] namely Begagund, Gopkral, Hariparigom and Pampur—all in district Anantnag. Recently, a solitary menhir has been reported from a site near Kishtwar,[7], about 130 miles north-east of Jammu. The megalithic site is situated on a rocky outcrop in the Pachhal village, about one and a half miles north-east of the Kishtwar town. The solitary menhir is a roughly hewn cylindrical column measuring about 14 ft. in height and 10 ft. in

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1. N. V. L. Rybot, "Groups of Menhirs in Kashmir" *Man*, XXXI, (1931), pp. 108-110
2. H. De Terra and others, *Studies in the Ice Age in India and Associated Human Cultures*, p. 234.

   Also De Terra, "*The Megaliths at Burjhama*" *Proc-American, Phil. Soc.*, No. 85.
3. *Indian Archaeology, 1960-61*-A Review, p. 11, (I.A.R.)
4. *I.A.R.* 1961-62, p. 19, But the details are not available.
5. Rybot, *Ibid*, pp. 109-110.
6. *I.A.R.*, 1962-62, p. 9.
7. Information kindly supplied by V.R. Khajuria, Curator, Dogra Art Gallery, Jammu.

circumference. The upper portion of the menhir is tapering and measures 3 ft. 6 in. in circumference. Trial-trenching done at the base of the menhir yielded small pieces of bones and charcoal mixed with earth at a depth of 4 ft. 6 in. The relics confirm that the menhir was erected in honour of some dead man. The age of this monument, however, could not be ascertained. Another site at Bhalla village, about 13 miles from Kishtwar towards Doda town is also known to possess three large megalithic monuments.[1]

D. Sind

The earliest known megaliths of Sind comprise stone enclosures, wells, cromlechs, caves, cairns and barrows reported by Captain Preedy[2] in the mid-nineteenth century. Thus stone enclosures were seen at three places,[3] the first near Karachi cantonment[4] the second near Dunraj on the direct road to Sehwan and the third near the village of Oomed Alli Chootah in the Valley of the Hubb, nearly 100 miles north of Karachi. These enclosures are made of large unhewn stones piled together without any binding material and were in the shape of a parallelogram. These are divided in several apartments by transverse walls of stones and varied in dimension The biggest enclosure was that of Karachi which measured 112 paces in length and 15 in breadth and was divided into seven apartments. Since no excavation was conducted at these sites, their association with the cult of the dead remains to be ascertained. Local tradition ascribes these monuments to "Wudwa Log" who constructed these monuments some thirteen centuries ago.

The next type of megalith in Sind region comprises a solitary 'cromlech' located in front of the stone-enclosure at Dunraj. It consisted of four stone altars each composed of four upright stones of large dimensions and was covered by a large flat slab on the top. Besides, some cromlechs associated with cairns were seen on the road to Shah Billawal in Baluchistan and also in the hills on the direct road from Karachi to Kotree. Again, stone graves were also seen on the hills near Waghodur, 20 miles east of Karachi. These consist of 3 or 4 large stones set on edge with a flat stone placed horizontally on the top.

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[1] Information kindly supplied by Mr. Khajuria.

[2] Extracts of letters from Captain Preedy were published by H.B.E. Frere, then Commissioner in Sind in an article entitled "Descriptive Notices of Antiquities in Scinde (Sind)" *JBBRAS*, V, (1857).
Also H. Cousens, "Antiquities of Sind" *Arch. Surv. Ind.* Imperial Series, XLVI, (1929), 44-45.

[3] Frere. *Ibid*, p. 349.

[4] Seen by Frere in 1845.

Of all types of megalithic monuments, cairns, locally known as 'chors' are comparatively most numerous in Sind. These are piles of unhewn stones and vary from 6 to 10 ft. in height. Besides, graves or barrows[1] are also found either singly on in clusters, generally in the vicinity of hot springs. These are very prolific in the springs of Naing and Kahee in the Janghar purugannah. These measure 15 to 20 ft. in length and 8 or 9 ft. in breadth and are about 2 ft. in height.

Further, over one hundred small isolated mounds or heaps of earth were located on the Tharo Hill[2] near Gujo—about 10 miles to the west of Tatta on Karachi road. Majority of them are rectangular and the rest circular in shape and have a height of 5 to 6 ft. Three monuments of the former category were opened by Majumdar who found remains of a chamber in each of them. On an average, these chambers measured 9' x 4'. The walls of these chambers are built of rough hewn stones and rise to a height of 2 to 3 ft. These chambers yielded pottery of unpainted red fabric comprising vases both large and small and dishes-on-stand. Although the pottery does not provide any definite criteria as to its age, Majumdar believes that this ceramic ware and the monuments may belong to some 'prehistoric epoch'. No human bones were recovered from these chambers.

E. Baluchistan

The megalithic monuments of this region have been examined in detail by the author elsewhere and a summary of the megalithic sites and the nature of the monuments is being given below. The principal type of monuments in this region comprise cairn burials reported from well over two dozen sites. These sites are dispersed both in south and north Baluchistan.

Starting from south, one encounters cairns on three sites on the Makran coast, namely, Ziwanri, Take dap and Gatti. Of the more than two hundred cairns at the first named site, as many as 178 cairns were opened by Stein[3] besides eleven cairns opened by Mockler[4] in the last century. These cairns consist of an enclosure made by building up walls with rough pieces of stone. These enclosures are externally circular or oval in shape. These have external diameter of 8 to 12 ft. while their internal diameter varies between 3 to 5 ft. The cairns yielded fragments of human bones, coarse spouted vessels of red ware, carnelian beads and comparatively limited quantity of metal objects. The latter included two copper bracelets or anklets and a thick iron hook. The other two sites, namely Take dap[1] and Gatti[2] had clusters of 32 and 54 cairns respectively. Typologically, these cairns are similar to those of Ziwanri. The contents of these cairns at both the sites were identical and comprised small fragments of human bones and coarse undecorated pottery. Metal tools were again scarce and these included a fragmentary copper pin or wire from Tape dap and a small bronze vessel from Gatti. The only noteworthy find from these cairns are plenty of fish bones and shell found in one cairn at Take dap.

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[1] Frere. *Ibid*, p. 351.

[2] N. G. Majumdar, "Explorations in Sind" *MASI-35*, (Delhi : 1934), pp. 20-21.

[3] Sir Aurel Stein, "An Archaeological Tour in Gedrosia", *MASI*—43, pp. 77-82.

[4] Major Mockler, in *JRAS*, (1877), pp. 127-132.

Further westwards, a cluster of five cairn burial sites was located in Damba-Koh region,[3] nearly 40 miles west of the Harappan outpost of Sutkagendor. The five sites of this cluster are Suntsar, Dam I, Basot, Damba Koh and Ruhgam. The cairns of this cluster are typologically similar to those of Zangian the only deviation being circles around the cairns of the first-named site. Some of the cairns of Suntsar and Dam I were opened by Stein who found fragments of human bones and pottery. Another cairn burial site of this region is Juni or Junri situated to the west of Gwadar port. Here, Major Mockler[4] had found fragments of human bones, iron objects and bracelets and lamps of copper and carnelian beads placed in earthenware pots.

The next cluster of three cairn burial sites namely Zangian, Turbat and Nasirabad, was located in the Kej Valley. Of the 490 cairns at the first-named site[5] 69 were opened by Stein. The structural details and contents of these cairns are similar to those of Jiwanri, the only noteworthy find being a horse's head from one cairn. Other cairn burial sites of this region include Mianaz, Bit,[1] and Kalaluk.[2] Besides, two groups of stone circles (cairns) were located on the northern slope of the chalcolithic site of Kulli..[3] Four of these were opened. These included fragments of calcined human bones and plain pottery.

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[1] Stein, *MASI*—43, p. 76.

[2] Stein, *Ibid*, pp. 74-75 and Mockler in *JRAS*, (1877), p. 130.

[3] Sir A. Stein, *Archaeological Reconnaissances in North-Western India and South-Eastern Iran*, (London : 1937), pp. 71-80.

[4] Major E. Mockler, "Ancient Dwellings and Tombs in Baluchistan", *PASB*, (1876), pp. 172-174.

[5] A Stein, *MASI*—43. pp. 86-87.

Further north, two megalithic sites have been reported from the Mashkai valley. These are Gwarjak[4] and Nokjo Shahdinzai.[5] The first-named site yielded burial cairns identical to those of Jiwanri and the latter had some roughly formed stone enclosures. Further north, some small stone circles were seen near Abdul-but[6] and some cairns and enclosures at Wahir.[7] Fragmentary human bones were found from the former site but these were absent in the cairns of the latter place.

In northern Baluchistan, burial cairns have been reported from three sites in the Loralai region. The most notable site of this region is Moghul-ghundai[8] situated on the Zhob. Numerous low cairns have been noticed at the foot of the hill above the chalcolithic mound. Of these, nearly sixty cairns were examined by Stein who found very small and fragmentary human bones, pottery, metal obiects and personal ornaments. The pottery is unpainted and quite distinct. The chalcolithic painted pottery, available in abundance in the vicinity, was conspicuous by its absence. Metal objects included arrow-heads and spear-heads of iron, 'cat-bells,' rings and a small jar of bronze and a well worked silver bangle.

Again, several cairns, typologically similar to Mughal ghundai were seen at Chaparkai Hill,[9] nearly 60 miles S. S. W. of the former site. Three cairns at this site were opened. These yielded small remains of human bones and brittle whitish earthenware pots. Cairns have also

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1. *Ibid,* p. 83.
2. *Ibid,* p. 56.
3. *Ibid,* p. 119.
4. *Ibid,* pp. 149-50.
5. *Ibid,* p. 153.
6. *Ibid,* p. 175.
7. Ibid, p. 174.
8. A Stein, "An Archaeological Tour in Waziristan and Northern Baluchistan" *MASI*—37, (Calcutta :1929), pp. 46-48.
9. Ibid, p. 54,

been reported from Tor-Dherai[1] situated 2 miles west of Dabar-kot, on the left bank of the Thal. The contents of these cairns are identical to those of Moghul ghundai and Chaparkai Hill.

Besides, a solitary site has been reported from the Valley of the Besema in the Kharan region. Thus circular stone enclosures typologically similar to those of Moghul ghundai were seen at Zayak,[2] about 25 miles N. W. of Nal. A few of these were opened. These yielded only soft earth but no bones or pottery.

Further west, a solitary circle of huge stones has been reported from Sung Butta,[3] about 15 miles east of Murdan in district Eusoofzye. The circle was made of stone pillars placed 3 to 4 ft. apart. The largest pillar measured 1 ft. –. x 2½ ft. x 2 ft. The stone circle had a diameter of 50 ft. However, the funerary nature of this circle could not be established.

Besides the several cairn burial sites described above, some other types of monuments of unknown antiquity have been reported form Baluchistan. Thus an example of cave-burial has been noticed from a cave near the village of Pandran[4] in the Jhalawan country. Here, an underground vault consisting of a front chamber and two recesses was found, dug in the conglomerate rock. This vault yielded one human skeleton and 25 human skulls along with the skeleton of of a dog. While no clue regarding the possible age of these burials is obtainable, for the absence of any associated assemblage, the photograph of the skulls indicates that these are quite fresh and may be of recent origin. Further some designs scooped out with rough stones on a number of boulders were seen in the Khedrani country[5] in Kalat State, but their association with megaliths is not certain.

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1. *Ibid*, p. 70. Here it be noted that another site of the same name is situated on the Zhob, nearly 18 miles to the S. W. of Fort Sandeman. But the site in question having burial cairns is situated 2 miles north of Dabar-Kot mound and 6 miles S.E. of Duki.
2. Stein in *MASI*, p. 34.
3. A. P. Phayre, "Note on Circles of Stones situated in the District of Eusoofzye", *JASB*, XXXIX, (1870), pp. 58-59.
4. R. Hughes-Bullér, "Cave burial in Baluchistan" *Ind. Ant.*, XXXII, (1903), pp. 242-243.
5. Gupte, "Some Rocks and Tomb incised Drawings from Baluchistan," *Ind. Ant.*, XXXIX, (1910), p. 180.

Typology

From the foregoing account it is clear that the predominant type of megaliths in north-western India are cairns and stone circles which have been reported from the Aravallis, Sind and Baluchistan. But unlike the former types, other types of monument in this part of the Sub-continent have only local distribution. Thus menhirs have been reported mainly from Kashmir, the only exception being Daosa in Rajasthan. Cist graves are localised in the Himalayan foothills and cromlechs occur in Sind and Rajasthan, Similarly stone enclosures have been reported from Baluchistan and Sind region only. The evidence of cave-burial is too meagre to invite any comment.

Skeletal Remains

The human skeletal remains from the graves are very meagre. It is only from Burzahom that a solitary human skeleton has been reported from the megalithic levels. The cists of the Himalayan foothills have yielded human skulls and disarticulated long bones. The cairns of Baluchistan have yielded only fragmentary human bones suggesting that the mode of the disposal includes either post-cremation or post excarnation burial. Human bones are extremely scarce from the megaliths of the Aravallis. Due to the lack of complete human bones, anthropometric studies, although attempted,[1] could not give any noteworthy results about the racial affinities of the megalith-builders of north-western India.

Modes of the Disposal of the Dead

The foregoing analysis of the contents of the megaliths of various zones reveals that three modes of the disposal of the dead were involved :

(i) Extended inhumation or earth-burial : This feature was noted from the solitary megalithic site of Burzahom (Kashmir).

(ii) Incomplete or 'Fractional' burials : These have been noted amongst the cist-burials of the Himalayan foothills and the cairns of South Baluchistan.

(iii) Post-cremation burials—Noted from the cairns of north Baluchistan and the Aravallis range.

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[1] S. S. Sarkar, *Ancient Races of Baluchistan, Panjab and Sind,* (Calcutta : 1964). pp. 24-25.

Here it may be observed that the cairns of north Baluchistan although having typological resemblance with those of south Baluchistan, show a marked departure in the modes of the disposal of the dead. Thus while the cairns of Jiwanri and other sites in south Baluchistan yielded post-excarnation burials 'more or less after Zoroastrian fashion', the cairns of Moghul—ghundai and Abdul-but in in northern Baluchistan contained the vestiges of post-cremation burials. Besides, there are a few types of 'megaliths' like the cairns of Dhoala Dhar range and the cromlechs of Deodhoora etc, whose purpose was neither funerary nor commemorative. Some of these were objects of worship. Here, one is reminded of a pertinent remark of Walhouse,[1] who had observed almost a century ago that some of these monuments had been used for religious purposes and had no sepulchral attachment whatsoever.

Legends

Here it may also be noted that some legends regarding the construction of the cairns of Rajasthan and Sind have been recorded. Carlleyle[2] records that the cairns of Satmas mark the place where members of a royal marriage party who were killed by decoits, fell. The same legend has also been recorded by James Tod.[3] Again a similar tradition has been recorded by Frere[4] about the cairns of Sind. It says that the 'chors' (cairns) "are erected when found single, to commemorate the site of some private murder, and when found in clusters, to mark the battle fields, and the numbers slain in engagements which have taken place in former years, between the several nomadic tribes inhabiting the hills."

Chronology

Let it be stated at the outset that barring the megaliths of Burzahom, no work has been done in recent years on these megalithic sites. Hence modern techniques of dating viz : fixing relative dates on the basis of the study of pottery and C-14 determination of associated samples, has not been applied so far. Secondly, the megaliths at several sites are isolated ones and habitation-sites of the megalith-builders have not been located. Thirdly, these megaliths represent single cultures on each site and even relative chronology on the basis of stratigraphical position of these relics cannot be worked out. As the present evidences tend to show, the megaliths of different zones do not have interrelations amongst them and the dates for one group of monuments cannot be extended to the monuments of other zones. In these circumstances, the only method left to us is the study of the contents of these monuments. Almost all the monuments have yielded tools, weapons and vessels of copper, bronze and iron suggesting that these are definitely Iron-age burials. Possibly this feature lead Sir A. Stein to observe that the cairns of Ziwanri and Moghul-ghundai in Balushistan 'cannot be older than the early centuries of our era.' The contents of these cairns have been studied by Gordon[1] who has ascribed a date of c. 850 B. C. to 450 B. C. Recently the iron implements of these cairns have been subjected to intensive study by Banerjee.[2] who broadly agrees with the time bracket given by Gordon. The comparative study of the former has also shown resemblance between the pottery of the cairns with Londo ware and the pottery of Sialk VIB in Iran. As has already been pointed out, the dates suggested for the cairns of Baluchistan cannot be extended to the megaliths of other zones. For example, it has already been seen that the cist-graves of Kinnaur may be as late as 8th century A. D.

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[1] M. J. Walhouse, "Some non-sepulchral Rude Stone Monuments In India, Persia and Eastern Asia", *Ind. Ant.*, VIII, (1879), pp. 164-167.

[2] A. C. L. Carlleyle in *Rep. Arch, Surv. Ind.*, IV, p. 21 and *Ibid*, VI, pp, 33-39.

[3] James Tod, *Travels in Western India*, p. 30.
Also his *Annals and Antiquities of Rajasthan*, p. 648.

[4] Frere in *JBBRAS*, V, (1857), p. 351.

Lastly, a word may be said about the north-western megaliths vis-a-vis their counterparts in South India. Although there is typological resemblance between the two, there does not seem to be any cultural connection between them. If it is true, then the views of several scholars like Walter Reuben, Wheeler and others that the megalithic idea came to south India through the north-west, should be treated with caution.

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[1] D. H. Gordon, *Prehistoric Background of Indian Culture,* p., 174.

[2] N.R. Banerjee, *Iron Age in India,* (Delhi : 1967), pp. 44-48.

Megalithic Rock-Cut Caves and Their Parallels Outside India

K. S. Ramachandran

A. Introduction

Rock-cut caves, scooped out of the lateritic bed-rock, are exclusive to the region now known as Kerala. They are to be found mainly in the districts Calicut, Cannanore, Trichur etc. The commonly accepted term "rock-cut caves" has been retained here, although the more appropriate nomenclature is shaft grave, which has been used invariably in other countries for denoting caves of similar types, for the entrance to these caves is always through a vertical shaft. Since their first notice by Babington[1] in the first quarter of the nineteeth century, many more caves of this type have been added to the list through chance discovery and intensive exploration.

The cave-complex consists of a rectangular or nearly rectangular vertical shaft with a few offsetted ledges or foot-holds at one end to facilitate easy descent, a rectangular opening in the face opposite the footholds—sometimes recessed—leading into the chamber proper. The plan of the chamber conforms to five types, viz.. circular, oval, oblong, rectangular and squarish. Broad ledges or benches, which in certain cases were elaborately modelled with high legs recalling a stone cot, were provided along the wall. Almost in the centre of the chamber, a pillar-like stump, round, square and rectangular in shape, is found generally as a support to the roof. In addition to these features, are also to be seen a few circular protruding lumps on the floor meant, perhaps, as vessel stands. But invariably the floor level of the chamber is below that of the entrance shaft. The chambers have either a domical or flat roof, while in the walls are occasionally provided with small niches. In a few cases, these caves have a circular top aperture, which like the doorways, was closed by stone slabs.

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[1] J. Babington, "Prehistoric Antiquities," *Transactions of the Literary Society of Bombay, 1819.*

Broadly speaking the rock-cut caves may be classified into three classes, viz., (i) the single, (ii) the double and (iii) the multi-chambered caves; the doorways of the last two are through the shaft itself.

Inside the caves were found pottery—Black-and-red, red and black wares—iron objects like daggers, axes, billhooks, tripods, hooks etc , and stone objects like grinders and rollers. A few urns inside the caves contained fragmentary bones; occasionally sarcophagi were also noticed. The funerary character and the overall similarity of contents with the burial furnishings of the megalithic graves of Kerala and the rest of south India have been discussed in detail and their megalithic affinity established by Sharma[1].

B. Graves outside India

Outside India, rock-cut tombs, appropriately called shaft graves, have been found in ancient Palestine and in the Mediterranean island of Cyprus. Megiddo, Gezer, Jericho, Tell Ajjul, Tell Fara are a few Palestinian sites. Lapithos, Ajios Jakavos, Vouni are some of the Cypriot sites.

Shaft graves which appear in the Proto-Urban Period in Palestine (towards the end of the fourth millennium B. C.) continue to be in use in the succeeding periods viz., Bronze Age, Iron Age etc., while those occurring in the Bronze Age of Cyprus are seen to be in vogue in the Iron Age and after. An interesting feature is the re-utilization of the tombs of the earlier periods over and again even though new ones were also excavated in each succeeding period.

Graves ascribable to the Bronze Age

Palestine : The Palestinian graves, like the Kerala ones, comprised a shaft-entrance of varying dimensions and shapes, a chamber or chambers and a doorway to the chamber proper[2].

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[1] Y. D. Sharma, "Rock-cut caves in Cochin," *Ancient India*, No. 12, (1956), pp. 110-113.

[2] Kathleen M. Kenyon, *Archaeology in the Holy Land*, (London, 1960), pp. 139-150; 189-190; see also Kathleen M. Kenyon, *et al*, *Excavations at Jericho*, (London, 1960), Vol. I; P. S. P. Handcock, *The Archoeology of the Holy Land*, (London, 1916), pp. 313-319; R. A, S. Macalister, *The Excavations of Gezer*, (London, 1912), Vol. I pp. 301 ff.; P. L. O. Guy and Robert M. Engberg, *Megiddo Tombs*, The University of Chicago, Oriental Institut Publication, Vol. XXXIII, (Chicago, 1938).

The shafts are circular, square and rectangular on plan. In certain cases the vertical face, opposite the doorway has ledges or footholds, either recessed, projecting or both for easy descent into the shaft. The dooorway to the chamber, as in the Kerala specimens, is rectangular and closed with stones.

The tomb chambers proper show several forms, viz., irregular, circular, oblong and rectangular. The floor level of the chambers is usually below that of the shaft—a sloping drop leading to the chamber. In one instance, at Gezer, entry to the burial chamber is through an antechamber located in between the shaft and the cell, with a rude step and a sloping gradiant[1]. Small holes, dug into the floor of the chamber, serve as a receptacle for burial furnishings. In a few cases, a shallow depression in the floor could also be found. In certain cases the walls contained niches also. Like the Kerala caves the roofs of the chambers are either flat or domical.

The number of chambers in each grave complex also varies, and accordingly the tombs may be divided into single, double and multi-chambered variety. Generally the cells of the double-chambered tombs are on the same axis as that of the shaft and are arranged one behind the other. Further, in the multichambered tombs, the cells are on the three sides of a central chamber, access to which is from the main doorway through the shaft. The sills of the side cells are on a higher level than that of the main doorway. In the multichambered variety especially those at Megiddo, the cells are rectangular : a variant of this type is the one where the other cells open off the shaft itself.

Cypriot graves :—The Cypriot tombs of the Bronze Age consisted of an entrance shaft or *dromos*, an entrance doorway and a chamber. The tombs are single, double and multichambered[2].

The *dromos* is nearly rectangular or rectangular, sometimes with one end wider than the other, the side nearer the chamber being wider. Usually the *dromos* is very long and deep. Steps in the *dromos* though absent in the earlier phase of the Bronze Age, are nonetheless present in the later phase. The doorways are rectangular and are closed with stones. The chambers are circular/oval but mostly irregular. Usually the side cells of the double and multichambered tombs open into the shaft. In some of the tombs there is a central depression in continuation of the entrance, on account of which the sides have an elevated area resembling sort of a bench. The roofs of the chambers are flat vaulted tending to become domical.

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[1] Macalister, *op. cit.*, p. 304, grave No. 4.

[2] Einar Gjerstad *et. al*, *The Swedish Cyprus Expedition*, (Stockholm, 1934), Vol. I.

2. Iron Age Graves.

Palestine:[1] The shafts are circular, rectangular and trapezoidal. The chambers are irregular, circular, rectangular and trapezoidal. At Tell Fara the shafts are long and narrow. In this period steps in the shaft become a common feature.

Inside the chambers, regular benches along the walls are also to be found. Pillars—round and square—inside the chamber are seen supporting the roof. Top aperture as an entrance into the chamber is noticeable at Gezer. In this period also double and multichambered varieties are to be found. The cells of the multichambered caves are located on the sides or the same axis as that of the shaft, in the latter the cells are aligned one behind the other. In the Tell Fara multichambered variety, the cells are trapezoidal on plan.

Cyprus:[2]: The *dromos* is long and deep, access to which is through a series of steps. The shape of the *dromos* is rectangular, the doorway also being rectangular. Benches on all sides are common although those covering only the portions are also noticed. Occasionally, there is an additional niche on the side walls of the chamber, and the roof, similar to that of Kerala and Palestine, is either flat or domical

Mode of Burial and Grave Furnishings

Mode of burials : Both articulated and disarticulated secondary interments were practised in the Bronze and Iron Ages of Palestine[3], while in Cyprus[4] only complete inhumation was the order.

Attendant grave furnishings : Along with the skeletal remains some attendant grave goods in the form of pottery, weapons, personal ornaments etc., were interred in both Bronze and Iron Ages. In Palestine, the usual shapes in pottery are jars with ledge handles, jars with spouts, dishes and bowls, cups etc. Weapons included daggers,

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1. Kenyon, *op. cit.*, p. 227.
2. Gjerstad, *et, al*, *op. cit.* Vol. III.
3. Kenyon, *op. cit.*
4. Gjerstad, *et. al.*, *op. cit.*

spear-heads, javelins etc. Toggle pins of bronze found in some of the graves are indicative of foreign influence through Syria.

In Iron Age these shapes in pottery continue but a few foreign elements seep in.

The iron objects include daggers, knives, arrow-heads etc.

The Bronze Age Cypriot graves contain jugs, bowls, globular cooking pots etc. Representative weapons are swords, knives, daggers, axes. Personal ornaments include pins and rings. In the Iron Age, jugs, amphorae, footed jars, bowls, lamps are noteworthy. Weapons like daggers, spear-heads, arrow-heads, iron rods with straight ends and cross bars etc. have been found.

A few objects of particular interest found in the graves of Palestine are worth mentioning. In tomb 878 at Megiddo, a normal shaft grave of Bronze Age, a Cypriot milk bowl sherd and a few animal bones are found[1]. Tomb 32 at Gezer attributed to the Iron Age has yielded two scarabs of the XXVI Dynasty of Egypt[2]. In the Iron Age, the forms of pottery and some of its decorative features show Aegean influence[3].

D. Comparison

From the foregoing it would be evident that there are some similarities in architectural features between the Kerala graves on the one hand and the Palestinian and the Cypriot graves on the other. The common features may be summarised as follows :—

1. Shaft entrance to the graves is common to both. The Palestinian grave-shafts take several forms while the Kerala graves are restricted to only one shape viz., rectangular or nearly rectangular.

2. Kerala grave-shafts have steps cut on the vertical face of the shaft. Though the steps are not a regular feature of the Palestinian examples, they do occur in the Gezer graves. Further, footholds either recessed, projecting or both, may be compared with the steps noticed in the Kerala caves. But the steps in the Cypriot graves and those in Tell Fara Iron Age come much nearer to the Kerala ones.

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[1] P. L. O. Guy, *op. cit.* p. 40.

[2] Macalister, *op. cit.* p. 334, tomb No. 82.

[3] Kenyon, *op. cit.* p. 223.

3. So far as the ground plan of the multichambered variety is concerned it does not vary very much from the Kerala graves. The central cell of the Megiddo tombs from whence the side cells open off has been relegated to the rear position in the Kerala tombs, two on the axis of the shaft adjacent to each other, and one on either side, with their entrances opening into the shaft. Again instances of cells opening into the entrance shaft itself are not wanting in the Megiddo example. The only difference is in the case of the double chambered tomb where the cells are on the same axis as that of the shaft, whereas in the Eyyal cave (Kerala) the chambers are on the sides of the shaft with their entrances through the shaft itself. The Cypriot example is nearer the Kerala ones, the difference being in the shape of the chambers : while it is circular in Cyprus, the Kerala example is generally rectangular.

4. Entrances in all cases are similar while pillars are common to Kerala and Palestine only. But benches occur in the caves of Kerala, Palestine and Cyprus. In size, however, the graves outside India are larger than their Indian counterparts.

It is, therefore, evident that despite minor variations, there is a basic unity in plan and elevation between the rock-cut caves of Kerala and the shaft graves of Palestine and Cyprus. Even in the mode of the disposal of the dead there is a similarity between the practices followed in the Kerala caves and the Palestinian examples.

Chronology

Effective and prolific use of shaft graves in Palestine commences in the Intermediate Early Bronze-Middle Bronze Age and continued through the Iron Age. A time span of 1700 years from the twenty-third century B. C. to the middle of the sixth century B. C. may be assigned[1]. The Cypriot graves described here date from the Early Cypriot II to Cypro-Classic II i. e., from the Bronze Age falling between the third millennium B. C. to the last quarter of the fourth century B. C.[2] Without any doubt the Kerala rock cut cave tombs exhibit megalithic affinities and their dates will therefore, depend on those of the megalithic monuments of India. Recent excavations have pushed back the date of Indian Megaliths to the early centuries of second millennium B. C.[1], while the terminal date of the first half of the first century A. D. is evidenced at Brahmagiri[2]. Thus there is not much of a time-lag between the West Asian shaft graves and the Kerala graves. Perhaps Kerala's contact with West Asia might have taken place any time within this limit and most probably during the Iron Age (c. 1000 B. C.–500 B. C.).

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[1] Kenyon, *ibid*, pp. 135-239.

[2] Einar Gjerstad, *Studies on Prehistoric Cyprus*, (Uppasala, 1926), p. 335 and also *The Swedish Cyprus Expedition*, Vol. IV pt. 2, p. 427.

Conclusion

It is thus obvious that architecturally the rock-cut caves of Kerala bear close similarity with those of Palestine and Cyprus. This similarity need not be taken as an accidental feature because of the evolved character of their architecture itself. The architectural tradition of Palestine, at least last phase, is also not far removed in point of time to that of the Kerala caves; the recent dating of the megalithic monuments of south India and the Deccan have considerably reduced the time gap between the two. Now the only difficulty that faces us in accepting the probable influence of the Palestinian tradition on the rock-cut tradition of Kerala is the absence of common furnishing material. Perhaps the authors of the rock-cut caves accepted the pottery tradition of their new home and might have got mingled up with the local population sharing not only their material culture but also, to a certain extent, their funerary tradition.

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[1] *Indian Archaeology 1965-66—A Review*, (in the press), The C—14 dates of the charcoal samples (nos. T. F. 570 & 573) from the Megalithic-Neolithic overlap phase from Hallur, District Dharwar, are 1105±103 B. C.

[2] R. E. M. Wheeler, "Brahmagiri and Chandravalli 1947 : Megalithic and other cultures in the Chitaldrug District, Mysore State," *Ancient India*, No. 4, (July, 1947, January, 1948), p. 202.

A Megalithic Plough–Coulter from Brahmagiri (India)

M. K. Dhavalikar

In spite of the excavations of several megalithic sites in India we do not as yet have a sufficient idea about the life of the megalith builders. Their burial furniture shows that they were certainly not a backward people. They produced fine pottery, built large megalithic tombs and had mastered the technology of iron. Though great horse-lovers, they were not nomads, but on the other hand, a settled agricultural folk who employed tank-irrigation to enhance their agricultural yield and took special care to ensure that their megalithic monuments did not encroach upon or sprawl into arable lands. Of their agricultural implements, a good number of sickles and a few hoes are usually found. But beyond that no agricultural tool is known so far. However, there is a very curious iron tool reported from a Brahmagiri megalith which appears to be an agricultural implement. Being a unique tool, not only on account of its form and function, but also because of its cultural significance, it has been discussed in the present note.

The tool consists of a long handle with a large chopper-like blade at one end, the other end being pointed (Fig. 10). From the illustration[1] it appears that it is 33 in. long. The handle is about ¾ in. thick while the blade, which appears to have been broken, is about 2½ in. broad. The blade tapers towards the lower end. It was found among the burial goods from a megalith (No. II) at Brahmagiri (Chitaldrug District, Mysore State, India). The tool has been described as a chopper-like object and it could not be identified as no parallels were then forthcoming. It is rather unique and so far has no parallels in India. It is undoubtedly a specialized tool which bears a family resemblance to the iron plough coulters that were in use in the Roman empire. A surprisingly similar tool from the British Museum has been identified as a plough-coulter[1]. The coulters, however, appear to be rather rare for even the British Museum possesees only a few specimens. One such example, which was formerly taken to be a plough-share, was later identified as a coulter which is only a sharp blade fixed at the front end of a plough to act as a cutter. The British Museum specimen (Fig. 10) which is comparable with that from Brahmagiri, measures 27¾ in. in length and has a sharp blade towards its lower end. It is quite heavy and weighs 7½ lbs. The Brahmagiri specimen is longer, that is 33 in. in length, but its blade is not as broad as that of the British Museum specimen. The identity of shapes between the two specimens is indeed interesting and the Brahmagiri tool can therefore be identified as a plough-coulter.

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[1] R. E. M. Wheeler, "Brahamagiri and Chandravalli 1947. Megalithic and other cultures in Mysore State," *Ancient India*, No. 4, (1947-49), pp. 360-61, Fig. 39, No. 34.

The coulter was devised by the Romans for using in the trans-alpine areas where they faced the problem of heavier and more cohesive soils[2]. The tool therefore can be said to have a dating value. The plough-coulter from Brahmagiri thus provides a date for the megalithic burial complex at that site which is quite in keeping with the date-scheme proposed by Sir Mortimer Wheeler, according to whom, there is at present no evidence to ascribe any south Indian megalith to a date earlier than 3rd century B. C., and the 3rd century B. C.—Ist century A. D. has to be accepted as a provisional time bracket[3]. The coulter came to India most probably in the latter half of Ist century B. C. when the trade with the Roman empire was brisk durng the reign of Augustus (23 B. C.—A. D. 14). In this connection the discovery of a Roman silver coin of Augustus in a megalithic cist in Coimbatore District (Madras State) assumes greater significance. It cannot be intrusive. On the other hand it can be said to have been purposely interred in the cist along with the mortal remains.

The coulter, as already stated, was devised for using in regions where the soil was heavy, compact and cohesive. In such regions simple plough was not very effective. In India simple plough with a wooden share was in use till very recently. In the Ganga-Yamuna doab in northern India the soil being smooth and loose, wooden ploughs served the purpose. But in the Deccan, where the hard and compact black cotton soil abounds, wooden ploughs might have proved ineffective. Furthermore, this also was the region which came into close contact with the Roman world in the centuries around the Christian era. It is therefore not unlikely that some foreign traders, who were Roman subjects, introduced this agricultural implement in India. However, coulters have not so far been reported from ancient sites in the Deccan with the solitary exception of the Brahmgiri specimen and their rarity shows that they were not adopted by Indian agriculturists. This is as it should be; for, tradition dies hard, more especially in a country like India where even now mechanization of agriculture has not yet made much headway, and the Indian farmer is still content with his simple wooden plough.

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[1] Christopher Hawkes, "The Roman Villa and the Heavey plough," *Antiquity*, Vol. IX, (1955), pp. 339-41, Pl. IV.

[2] Charles Singer and others (Ed), *A History of Technology*, Vol. II, (Oxford, 1957), p. 86.

[3] Sir Mortimer Wheeler, *Early India and Pakistan*, (London. 1960), pp. 162-63.

[4] Ibid., p. 162.

Megaliths and black and red ware

K. V. Soundara Rajan

Introductory

In recent years, the study of the Indian megaliths has received a new spurt of encouragement at the hands of the official as well as the academic bodies in India. It would be no exaggeration to state that this development, to a large extent, is due to the current better understanding by archaeologists of the Indian ceramic type known as the 'Black and red ware.' This becomes, at one stage, the type fossil of the Indian megalith and thus its scrutiny becomes fruitful for a better appreciation of the origin and growth of the Indian megaliths themselves. Till less than two decades ago, it was customary to 'fix' this ware and with it the megalithic type where found with this ware, to the close of the first millennium B. C. spilling into the two opening centuries of the Christian era. But we know now that the ware has, seemingly, its antecedents in the proto-historic Indus culture substratum in western India, and weaves its way, like the string of a garland, into the many regional ceramic fabrics of the country casting upon itself the formal and decorative mantle of the regions. This is why we have an apparently heterogeneous *milieu* formed by the 'black and red ware' in each zone, and the impression is generally gained that the ware, wherever found, is basically the product of a technique and is not a culture-criterion of the zone. This impression is, however, only partially true and it is the 'megaliths' of south India that bear out the integrity of this pottery to a great extent, and compel us to trace the ancestry of this ware backwards into the proto-historic era. The snowballing characteristic of the 'Black and red ware culture' reached its most finite stage when it imbibed the tendency to erect spectacular funerary edifices to the dead clansmen, and to this extent the 'megalithism' itself was only an *acquired* characteristic of this ceramic culture and would itself be liable to be followed in restrospective trail to the sources of diffusion of the 'megalithic' element through contexts unconnected with the story of the black and red ware ceramic. For, notwithstanding the purely funerary practices like the full and fractional, non-cremation and post-cremation, pit and pot burials known to Chalcolithic cultures, since the dawn of Indian civilization, Megalithic tombs form an entity in themselves and are to be traced through their own adventitious and geographically controlled factors of dissemination, and thus knowing Chalcolithic burial forms is not the same as knowing Megalithic tomb forms. A third element, aside of the ceramic and the tomb, that enters the argument is the metal; here iron. This metal was acquired by the 'Black and red ware' ceramic community, in the course of its peregrinations in North India, and the available evidence shows that they are already found associated with it in early centres of the first Millennium B. C. We do not yet know what and where the earliest type or occurrence of megalith in India is. It is sometimes held with a hypothetical facility that since megaliths are already seen in the early centuries B. C. in the lower Deccan, their counterparts further north, such as they are, should be legitimately earlier. But the problem defies such simple solutions. The only thing that we perhaps know about the Indian megalith is, broadly speaking, that it is found to have largely been a maritime impulse inducted into the country by multiplicity of vehicles, and in so far as this goes, we would be justified in taking the western seaboard from Kerala and Baluchistan as having served the potential line of entry. Decidedly, the ambit should have been narrower; conceivably it did not just follow a north-to-south trail. More we cannot visualise at present.

The role of pottery in Megaliths

The Megaliths of India reveal a social culture wherein the essential elements of the 'life-after-death' concept have been well abbreviated. In this the pottery plays a great part since they were the chief media for vessels and utensils. The use of pots of earthenware, as different from metallic and alloy types, would suggest a state of society where the use of copper, alike for utensils as for implements and other knicknacks, had been effectively left behind, and the Iron metallurgy with agricultural-cum-defensive bias in the tools dominated the scene. But the prolific use of 'black and red ware' and other plain ware pottery in the Megaliths would additionally confirm the thesis that the ceramic mode was as preferred a type as the metal. Otherwise, the occurrence of stone implements, iron objects and pottery to the exclusion of copper or bronze articles for vessels as well as tools would not have happened uniformly in the entire range of Megalithic tombs. The argument that copper or bronze could have been in short supply might not be too effective since the utilisation of metal was not dependent so much upon the availability of it nearby, as upon the traditionally continuing familiarity with its use. The new metal, therefore, it could be safely surmised, brought with it the new pottery which it had been acquainted with it for quite some time already. Thus, the Megalithic 'black and red ware' was a concomitant of the advanced Iron Age intrusion into south India, and on that score, was also an integral part of the pre-megalithic Iron Age set up in north Deccan and north Indian plains. An extended corollary of this situation would be that all cases where there are true Megaliths, using 'black and red ware' in them and allied habitation sites also using the same ceramic, these twin elements were not coeval and the ceramic element should have appreciably preceded the monumental funerary element. Thus, the very presence of 'a black and red ware' in a Megalithic grave would make the context evolutionarily subsequent to and contingent upon the already known establishment of the ceramic in that area. This is a somewhat significant premise which would be amenable to the elucidation of some of the culture-contexts of this ceramic in zones where the non-Megalithic as well as the Megalithic traditions in early Iron Age could be seen as having been in vogue. *Pari passu*, it would also help us in identifying the exact status and character of the Megalithic tombs in each of these areas. Incidentally, the disparity in some cases with Megalithic 'black and red ware' of a neighbouring site would, by itself, throw pointed light on the relative age and affiliation of the two variant pottery forms of the same ceramic. The sum total of all these factors would tend to show that (1) in residential sites particularly of the early Iron Age, the 'black and red ware' would be closely related in forms to one of the major ceramics of the site, already current; (2) the Megalithic tombs show almost invariably the 'black and red' ware alone, in bulk, aside of a miscellany of plain wares; (3) that there was no specific 'fixity' of dispersal-orientation, alike for the pre-Megalithic as for the Megalithic 'black and red ware,' and they were the successive manifestation of the same community perhaps, in appropriate chrono-cultural stages; (4) the full or extended burial was, by and large, a hang-over of the chalcolithic or protohistoric trait, even when employed by 'black-and-red ware' using community itself, while the tradition of fractional and secondary burials when accompanied by a tomb structure-whatever be its empirical form—would be symptomatic of the trail that 'megalithism' would have been following from outside the frontiers of India, and these, in their turn, might or might not have any co-extensive basis with the 'black and red ware' ceramic itself.

The cultural inheritance of the Black-and-red ware

It is too late in the day to disown the domicilty of the 'black and red ware' as the representative of a viable, though not necessarily cohesive community, in early India. This is, of course, not the same as saying that the origin of the 'black-and-red ware' is a unitary problem. For, we know that outside the frontiers of India, the ware is best known in the so-called 'black-topped' wares of Egypt. There is perhaps an as-yet-unsubstantiated but filiated link of the 'Megalithic' culture and its ceramic in India with its earlier counterpart in Egypt. But we are not able to spell it out.

The ware, in India, with an earlier phase of painted design repertoire and technique, again peculiar to its own, is found at its oldest in the Harappa culture substratum at Lothal in Gujarat, whose peninsular situation at the head of the Cambay gulf is itself of some significance. The ware is not considered as directly co-eval and/or an integral part of the Harappan settlement--in fact it might even be anterior—although the forms that it sports would be shown as drawn to some extent from the Harappan *mileu* in a restricted sense. Further north, the closed hill-valley topography of Rajasthan witnessed a rather and well-consolidated growth of the 'black-and-red ware' of the white painted varieties, in the Banas {valley, which all but tends to suggest—if we care for the Aravalli barrier of the S. W—N. E strike—that its links were with Gujarat mainly and thus its diffusion was northwards and, perhaps equally well, eastwards from the Cambay gulf to Central India through Narmada arterial route. It is significant to note that in the same area, namely Gujarat-Saurashtra, we have the recrudescence of the 'black-and-red-ware' in the post-Harappan chalcolithic, as well as in the early Iron Age, with some of the villages, as for example, Nagal, Nagara etc. on the Cambay mouth having only one early culture, ceramically speaking, viz., the plain 'black and red ware.' The associated finds, such as bone and stone objects, not to mention the graffiti of the pottery itself in some cases, reveal a meaningful affinity with other similar wares in the northern plains. The situation is summed up graphically when we state that the white painted 'black and red ware' is available, apart from Gujarat and Banas valley of Rajasthan as far east as at Pandu Rajar Dhibi in West Bengal, and as far south as at Adichanallur in Tirunelveli district of Madras State. Of course, it would be an over simplification of the case to state that it had such a wide diffusion, because the chrono-cultural context varies from zone to zone. The plain ware is itself, however, found already well preceding the well-known N.B.P. ware of northern plains as it does in Gujarat also; and, in fact, almost coeval with the Painted Grey ware itself, it is seen at Atranjikhera in western U. P.

The pre-Megalithic plain 'black and red ware' is now broadly observed as having existed from around the very beginning of the 1st millennium B.C., and upto its very close, spilling into the early centuries of the Christian era. Of this, almost the entire latter half is seen as the legitimate stretch of the Megalithic culture itself in peninsular India. It is true that the chalcolithic painted 'black and red ware' does not suddenly devolve into the iron-using plain 'black and red ware.' But it would, at the same time, be realistic to consider the chalcolithic element in the painted 'black and red ware' tradition, itself as a purely extrapolated feature since the 'black and red ware' has shown great facility in accepting and acquiring all that came in its way, in an uninhibited manner. In fact, the ware itself has many variant colour schemes, ranging from bright black and red, to grey and pale red or pink, with or without painting. But it could be seen, none-the-less, that it assumes only one kind of painted scheme, namely, the white kaolin paint on its inner or outer surfaces. The ware has another feature, as not yet satisfactorily explained, namely, that most of its shapes in the chalcolithic painted variety are different from those of its own plain ware phase—where this phase especially succeeds the chalcolithic. It is possible to guess that it might be due to the dependent character of the 'black and red ware'-using community upon the more dominant ceramic community like the Harappan ware, Malwa ware, etc., resulting in the adoption of the forms by 'black and red ware' also. In its Iron Age plain ware stages it is seen to be more self reliant.

Further, it is seen that in quite a few sites, like Noh in Rajasthan and Hastinapura and Atranjikhera in U. P., the plain ware itself is found among the earliest levels almost coeval with or earlier than the Painted Grey ware, but seemingly without iron objects. This characteristic is contrasted by the incidence of painted 'black and red ware' in what is mainly a chalcolithic stage, prior to the advent of iron (which is generally accompanied by the plain 'black and red ware' amidst other wares) in the eastern Gangetic plains in Bihar and Bengal. This dichotomy would seemingly have a direct contribution to make to the problem of the first iron-using community in northern India, and its stratigraphic position. It would seem in any case that first appearance of Iron took place in the Gangetic plain itself, rather than in any part of Rajasthan, Gujarat or Central India. This fact would appear to be corroborated by the stratigraphy and associative finds of the various excavated sites in U. P. and Bihar. At the same time, the non-occurrence of iron, even after the advent of the Painted Grey ware as at Noh in north east Rajasthan fringing the west U. P. is worthy of note. It is equally notable that in this cis-Aravalli area, close to Jamuna-Ganga doab, the painted tradition of the black and red ware does not appear to exist. These two significant features would resolve themselves into two variable alternative culture-contexts for the ceramics, concerned, to wit, the existence of plain 'black and red ware' and Painted Grey ware *without* iron, and plain 'black and red ware' (a successor to the painted variety) and Painted Grey ware with iron, manifesting themselves in the self-same Yamuna-Ganga doab or its south western periphery. The natural corollary to this would seem to be that the advent of iron to this doab might have been from a direction other than the route of movement of the Painted Grey ware in north westwern India. The radio-carbon dating (on the conservative side) shows a consistent 7th century B. C. date for the Painted Grey ware levels at Hastinapura and Atranjikhera, although at the latter site, the self-same layer yielded a much older age in a solitary determination made earlier. It would perhaps be prudent at this stage to take the younger date as dependable at least for the central or late stage of the Painted Grey ware, and *ipso facto*, for the occurrence of iron alongside it and with plain 'black and red ware,' in the doab. In the Ganga valley itself in Bihar the site at Chirand has shown that the black and red ware with iron is manifest in eighth century B. C. levels there.

The occurrence of exactly similar types of bone points with black and red ware (plain) with or without the company of the Painted Grey ware at widely separated places like Nagal and Nagara in Gujarat, Noh in north east Rajasthan, Ujjain in Malwa and Atranjikhera in the doab and Sonepur in Bihar would seem to show that the plain 'black and red ware' dispersal was a centrifugal process, demanded by the community movements in the wake of post-Chalcolithic resettlement in northern and central India. The main zone of original settlement of the 'black and red ware' people should be deemed as the western Indian tract (including lower Narmada basin from which they fanned out, particularly along the Gangetic fringe and riparean routes, well before the diffusion of the Painted Grey ware people themselves deep into the Ganges valley.

In so far as megalithic traditions are concerned we should bear in mind the need for a spurt in the funerary tradition and the wherewithal to give effect to it in the form of spectacular stone tombs. These, by their very nature, were easy of accomplishment only in a context when the community had achieved cohesion. This occurs for the black and red ware mostly in the later part of the first half of the first millennium B.C. and only in the lower Deccan.

The occurrence of different kinds of funerary monuments associated with black and red ware in varying degrees and characteristics in India should alert the discerning worker on the cosmic factors of the problem with such a varied geographical terrain as in India, and the movements of surprisingly restricted variety of population groups from the earliest times of the Harappan civilization, of not more than three or four broad somatometric groupings, we should presume that the viccissitudes of the black and red ware using communities were themselves of varied patterns in different parts of India and while in the Deccan, these people acquired integrity and cohesion socio-culturally in the first millennium B.C, their kinsmen in the central Vindhyan plateau in its northern as well as southern fringes had been isolated in certain areas and ostensibly they did not receive any impact of the main stream of 'megalithism' till long afterwards and this might account for their rather poor, discrete and ill-organised and only seemingly sepulchral tomb groups, with only the black and red ware and in some cases the iron implement arche-types to vouch for their being a part of the 'megalithic' activities.[1] It is also likely that the absence of even iron in some of these as in the Banaras group and the coursed buried of the tombs, might have been the indices of their non-descript and rather backvash characteristic and stylistically the latter (coursed buried) feature could have been a retro-active stimulus from the Karnataka region where the megalithic tombs are often of this kind. In the sequel, the possibility cannot be overruled that the megalithic tombs found at Kamptee, Dhanora and Junapani in Maharashtra and Madhya Pradesh on the one hand and those of the Mirzapur, Allahabad and Banaras Districts would be the degenerate extensions of the 'megalithic' cycle in India.

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[1] C-14 determination for the samples from Kotia (District Allahabad) varies from 250 B.C. to 1725 A.D.) at least indicating that they must point to the early phases of megalithism in India.

A basic fact, not to be ignored regarding the Indian megaliths as a whole is that their range of formal and architectural variation is not a factor of geography and culture movement of the black and red ware alone, but of the secondary and second hand relationship they have with their analogue models of West Asia and the Mediterranean. The impulses of 'megalithic architecture' or 'megalithism' to put it simply, were derived by contacts, outside the Indian subcontinent and thus are imported, reassimilated and re-presented copies of their models within India, their authors were more or less the same, namely the 'megalithic black and red ware' using people. But they were entirely different from the authors of the original models of the west, culturally and ethnically. For example, the rock-cut caves of Cochin have a close resemblance to the shaft-graves of Palestine and Cyprus and of Los Millares, Spain, whose latest manifestations are around the first half of the first millennium B.C., and nearer in form and time with the Kerala counterpart. To that extent, the context of importation of the impulse is well-argued. But the temporal relationship stops there and the Indian megaliths are entirely Indian manifestations of this world-wide Megalithism and not a link in any cultural chain across the continents ethnically. They are composite in their architectural ingredients and form diverse original sources, maritime as well as overland. Thus within the country itself they would divide into many 'first-arrival' zones later resulting in contact zones of hybridisation and diffusionary zones of transmutation, Unifocal or uni-directional theory for their arrival and dispersal within the country would therefore be inadmissible. Its culture criteria (in grave forms) will have to be dissected and extra-Indian progenitor sources identified to the extent possible and then their multipronged movement, at variable chronological stages into India would become manifest. Their age in India is certainly this side of the eighth century B. C.

The pattern of provenance of the earliest sepulchral monuments of India

For the purpose of our present topic, we should necessarily confine ourselves to the truly 'megalithic' graves of India. We find a great concentration of these in the southern India and these among themselves break up into a variety of forms both in respect of the megalithic architecture and in the burial proper. Broadly speaking, four of five basic varieties are discernible, namely the cists, the dolmens, the pit circles, the subterranean excavations and the commemorative or part-sepulchral edifices like *topikals*, and menhirs. An important aspect to be kept constantly in mind in this connection is that the dolmen provenance and the cist-provenance—as contiolled by the availability or otherwise of good quarryable rocks (though knowledge of technical know-how will equally well matter) are purely physiomorphic indices and are certainly not regional or spacial—culture-indices. Thus the whole of Chingleput is almost entirely dolmen-preferred, south and north Arcot Districts, a mixture of dolmen and cist, Coimbatore, Salem and Tiruchirapalli cist-based, and Kerala of ternary groups of rock-cut cave tombs, cists and urn-burials respectively in the various physiographic divisions of the state. Thus, we would do well to base our analysis upon the generalised morphology of tombs coupled with the coffin carriers rather than as regional *milieu* in each case. If so, we perceive at once that the coffin proper is either a sarcophagus, or an urn or an open burial, all the three entering with an equal facility into a cist, dolmen, pit or rock-cut cave tomb. Thus the hallmark of the Tamil and Kerala country for instance is sarcophagus or urn carrying dolmen, cist or pit bounded by a stone circle. While the dolmen with its rude construction (influenced by gneissic rock) would have been helped by an inner coffin carrier like the sarcophagus, this factor does not operate in a well quarried and furnished granitic cist tomb. By this token, the entry of sarcophagus inside the cist (as in south Arcot) might be relatively later to the cist-inception in the Mysore area. Since, however, the sarcophagus could not have independently reached east coast without impacts on the west or central uplands, the occurrence of sarcophagus on west coast should imply a priority in dating the western ones. Similarly that of Mysore-Karnataka is an open type of dolmen or cist or pit variety. The Andhra country has on its eastern side a sarcophagus usage in a cist while the western and central ones show cist or dolmen with single or multiple chambers of open burial type or urn burials in pit circles. In all these cases, the mode of burial is fractional, secondary and of multiple number of persons ostensibly. Almost all these give black and red ware in the graves, generally of the now familiar 'megalithic' fabric, with a crazy or crackled slip fired at rather low temperature and none too tough to withstand soil pressure, but well burnished. A variant form is seen in certain parts of western Karnataka in Belgaum and Bijapur—Dharwar Districts, wherein the bunding enclosure is square as 'often as it is circular and megalithic graves not yielding black and red ware at all in the interment proper are known. This area also yields tombs entirely of sandstone and with multiple chambers with a primary axial corridor or alley and coursed dry-bond construction of the enclosure, which is often square. It introduces an element of plausibility by its novelty for the germination of the earliest megalithic building propensity in the peninsula in this zone.[1] An interesting feature of some of these graves as different from the truly Iron-Age rooted graves further east and south is that while the latter yield prolific iron objects, the former are rather limited in their iron articles and a mixture of occasional copper microlithic or other minutiae are not entirely unknown. Thus the tendency would seem to be justifiable to read into them a late Chalcolithic cultural nexus and there is the propinquity but not the predominance of the black and red ware ceramic in such a context. This would indeed be the most ideal situation conceivable from the advent of megalithism into India. It is necessary to note that the chalcolithic burial practices wherein multiple urns placed laterally and pierced open to accommodate the stretched body of the dead or the full skeleton, is by no means to be brought within the scope of 'megalithic' practice, either culturally or chronologically. The multiple chambers and alley, the port hole the rock-cut tombs of Kerala and the sarcophagi coffins of south west peninsula, all point to extra Indian and to a specific degree Mediterranean origin for the morphological influences, although it is yet obscure as to whether a part coastal part overland route was preferred or a wholly coastal one. It is equally apparent that there were successive waves of 'megalithism' into peninsular India, all along the Karachi-Kutch, Karnataka-Kerala sea board and by about the third century B. C. this process was already completed, and a synthesis of various individual cultural indices like the port hole, the sarcophagus, the cairn circle, the outer passage had been affected, thus making the Indian Megalithic culture a *congeries* of parts.

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[1] Information kindly supplied by Mr. A. Sundara, Technical Assistant, Archaeological Survey of India, South Western Circle, Dharwar.

There is an aspect of this black and red ware which is less apparent than others. It is the fact that from the time megaliths start occurring in association with this ware, the ware itself becomes somewhat changed in fabric being 'prone to be thicker with a dark glossy magnetitic or haematitic slip and a crackled appearance. As already mentioned, its shapes also become very characteristic and archetypal from them onwards. So much so, we are in a position to distinguish them from the chalcolithic or post-chalcolithic early Iron Age wares, at mere sight. The types of forms which are most popular then are the tulip vases, the funnel shaped vases with flat or rounded peduncle etc. An example of such a case is seen from Ranjala in the Tapti valley in Khandesh District. The site is of the nature of a fractionary buried pit—perhaps not even in a regular site or cemetary but none the less characteristic in the 'megalithic' fabric and form of its pottery. Such secondary fractional burials have been noted in the same valley at Bahal (Tekwada) where, however, their interment is in an urn and in a seemingly chalcolithic context. They have been noted as far south as at Hallur on the Tungabhadra—again in a chalcolithic context but without a burial container. In a truly Iron Age context, however, it has not yet been seen, except Ranjala—from its pottery fabric. Thus, we may say that the advent of this type of 'megalithic' pottery is attested to in the Tapti valley (Ranjala) but not in a regular megalithic context. The southernmost extension of the Chalcolithic painted black and red ware itself is in the Bhima valley, as at Udchan and other places. The plain black and red ware of the early Iron Age is also seen already in the second quarter of the first millennium B.C., at Prakash. Thus, we might be able to surmise that it is in the Tapti-Godavari doab that the transmutation of the Chalcolithic and early Iron Age varieties of black and red ware into the 'megalithic' one, took placed and *ipso facto*, the advent of the megaliths should also be placed in the region immediately adjacent to it to the south namely the Godavari-Krisna region. The distribution of known megalithic forms containing typical ceramics and burial furnishings, in the Deccan would show that the northernmost point of diffusion of the Iron Age megalith is Madhya Pradesh, as at Junapani near Nagpur, although some sites near Banaras, like Hatia are also mentioned as having produced black and red ware in 'megaliths' the structure of which is quite unlike any known megalithic monument either in India or in the west, and *prima facie* decadent in grade. This black and red ware is also seen to be different from the corresponding ware of the same colour scheme in the habitational sites nearby. South of Krisna valley, it starts showing identifyable archetypes and zones of distribution. But there is a diversification of the mode of burial in the eastern longitudes, wherein a coffin container enters the grave, as already narrated.

It is very difficult to piece out the tangled skein of this diversification from zone to zone while yet within the framework of a broad unity of purpose and tomb architecture. The physical anthropologist has come to tentative conclusion that there are four racial elements represented in the megaliths of Brahmagiri, Maski, Adichanallur etc. and these are the Australoid, the Mediterranean Indus, the Brachycephalic and the Scytho-Iranian. These variously answer for the indigenous Australoid-Veddoid substratum in Neolithic culture on which the Iron Age megalithic folk impinged; the central Indian chalcolithic people who brought the burial customs themselves and the painted pottery to the southern Neolithic communities; the Indus valley dispersal groups which survived long trials and tribulations up to Iron age, through the black and red ware communities of the Deccan; and an indeterminate foreign element. It is not yet clear if the last would stand either for those on whom the inception of a part of the "megalithic cult" into India should be fathered or for those who after all might have been the bearers of the Iron technology into India. Of course, the Scytho-Iranian strain in the skulls of some megalithic sites whould now show their degree of remoteness from the Iranians of the Persian plateau. They might have simply been the lingering and diffusing groups in the indigenous cultures of India from the post-Harappan times. The induction of 'megalithism' into India, when all is said and done, is certainly not to be attributed to any single specific group trafficking this cult about, but only to indigenous folks collecting these concepts from on foreign shores and lands; with which they might have come into contact, progressively more and more after the Harappan times, when the Persian gulf became a halfway house and a clearing house as well for the two-way traffic between Orient and West Asia. Thus, we seem to be drawn to the tentative though inevitable conclusion that (a) the black and red ware in its chalcolithic as well as the later Iron Age and Megalithic varieties is primarily indigenous or autochthonous (b) the advent of Iron into India well preceded the advent of 'megalithism' into India and by this token there is no great likelihood of pre-Iron Age megaliths in India (c) the megalithic architecture though certainly an imported cult and formula gets reduced to typically Indian metamorphosed forms, and is the net result of a large and reasonably competent community in India which found it proper to cling tenaciously to burial-oriented practices as different from the cremation-oriented ('Aryan' or non-indigenous) activities. Thus a sociological viability is sought to be emphasised here.

An incidental matter of some importance is the built-in preferences of the megalithic tomb architecture. One such relates to its orientation. There is a distinctive tendency to face south in the most northerly megaliths in the Karnataka, as in the Dharwar, Bijapur Belgaum Districts. It is these again which are the most varied, outlandish types and of cyclopian construction in many of them are a prevailing rectangular enclosure often. The orientation of the more southerly megaliths are invariably towards east. There is an Egyptian theory which relates the orientation of the megaliths to the direction of the rising sun, in different parts of the year and at different places due to the precession of the equinoxes caused by the eccentricity of the solar orbit. There is another theory prevalent with some European workers which atrributes a variation between east and south dependent upon the location of the site in north or south latitudes, the more northerly ones tending to be oriented south, according to this theory. All this is said to have a bearing upon the inception or trail of the megalithic cult into India from the west. The occurrence of the preferred southern orientation to most of the north Karnataka megaliths might have a minimal suggestion that their cultural inheritance was influenced by the stimulus coming from temperate latitudes (of West Asia or European or the Mediterranean). Some Banaras megaliths also have a southward orientation.

As for south east Asia, although the neolithic culture of this region impregnated into the Assam-Bengal-Orissa axis and also brought with it certain megalithic customs, as reflected in the activities of the aboriginal Bondos and Gadabas of Bastar, the Oraons of Chota Nagpur and the Khasis and Garos of Assam, they do not seem to have had any significant impact upon the peninsular Neolithic or Iron Age usages which had been at successive stages essentially traffiking with west rather than south east Asia.

Chief features of 'Megalithic' pottery in megaliths and habitations

The megalithic black-and-red ware has a distinctive fabric which could be taken as a temporal devolution over the earlier plain or painted ware of the same order, since it differs in many technical respects from the latter, such as in having more lustre, has individual burnishing strokes resulting from stone burnisher, has a more porous, less smooth and seemingly salt glazed, crazy exterior skin. The inclusions contain silica and *degraissants* to a great degree of concentration. It almost always has taken a zigzag fracture on account of the above characteristics. It is invariably, though not always, of thicker fabric. It shows a more consistent zone of reduction along the edge and has a more prevailingly reddish brown oxidised exterior body. It shows a greater variety of forms like dishes, bowls, lids, rug stands, conical and funnel shaped vessels, tulip vases. It has a denser concentration of the slip on its skin, which, recent laboratory tests in Britain, attribute to an extraneous application and refiring. It almost always carries graffito-markings on its exterior rim or waist and sometimes even in the interior. It would seem that it manifests a direct relationship with a growing or fully developed Iron Age metallurgy involving perception of magnetitic and haematitic slip value while the earlier pottery is often self-slipped and with pale burnishing. At present, practically no site north of the Narmada has yielded the 'megalithic' pottery and its earlier and subsequently coeval—and perhaps co-equal-finer black and red ware is also not connected with any kind of specific burial, except in Mirzapur, Allahabad, and Banaras, the age and character of which is at present highly uncertain. Thus the formal variation, disparity in colour scheme, technical diversification, graffiti and above all, the presence of grey or kaolin-based painted designs mostly of slashes and dots would seem to be the main difference between the two varieties. Extant evidence would seem to show that the earlier fabric of the plain variety is itself considerably anterior to Painted Grey ware and even within the Iron Age they precede the Black-and-Grey-ware complex.

There are other wares, of the red ware type and the all-black ware type, accompanying the 'megalithic' black-and-red ware. Of these, the all-black wares are a true concomitant of the 'black-and-red type, since, save for the double colour-scheme, they display a kinship in fabric, slip and shapes with the latter. It is to be taken that, similarly, the red wares should also be the products of a desire to keep the kilns in a well oxidised condition and thus they are the result of a deliberate understanding of the potentialities of the kiln and firing in the arrival of the colour scheme. It should be stated that they are of a pinkish red variety in slip form generally and have shapes which are somewhat different from the general bulk of the megalithic pottery. One may even go further and state that it is the red ware equipment of the 'megalithic' culture that carrys forward the formal and textural characteristics of the pre-megalithic regimes of the black-and-red ware using communities, and are thus capable of meaningful comparisons with the earlier periods. In fact, at Brahmagiri itself, there had been the occurrence of these red wares, sometimes painted; which were found in pits much earlier to the megaliths themselves (as in Meg. V and X), analogous to types noted at Bahal in the Tapti valley. It is these red ware types again that show a fleeting kinship with the forms that had prevailed in the northern plains in the periods ascribed to the vogue of the "N. B. P. Ware." These continue to occur in greater number in the early historic times and assume regional diversifications, while the standard 'megalithic' black-and-red ware and all black ware shapes are evincing very little mutation in shape and thus emphasise their essentially ritual and conventional usage, relatable to the black topped ware varieties of the dim and distant past in Egypt. The all-black ware, further becomes transformed in due course into the 'Satavahana' preferred black ware, carrying a high burnishing, more carefully fired at a higher temperature and applied for domestic and monastic use in an era when Buddhism introduced a remarkably rich constructional activity for the laeity and the royalty, in the shape of *chaityas*, *viharas*; *Aramas* etc. of brick and stucco medium—an integral part of the kiln-based technology whose another facet was the moulded terracottas figurines. In the 'megalithic' period, terracottas are comparatively very rare though not entirely absent, but in the pre-megalithic black-and-red ware regimes further north of the Narmada, terracotta art, mainly of modelled figurines had already manifested a rich and wide repertoire as at Nagal in Gujarat; the technique of which would, by its pinched and smoothed characteristics recalls the traditions already inherited since the Harappan times. All this implied a progenitor area where clay and wood were in plenty and stone was scarce. Contrariwise, the megalithic culture, as and when it became a part of the black-and red ware using community, brought a built-in awareness of the stone-medium and thus directly related its own genesis to a stone-rich area.

It is already becoming increasingly apparent, by the further acquisitions to our knowledge of black-and-red ware sites as well as seemingly and truly megalithic monuments and sites that are being added day by day, that there is a clear distinction in cases of occurrence of both the habitations and the megalithic sites; that the pottery of both has a variability in unity; and further the richness of pottery in a megalith of the more advanced phase is rather well contrasted by the comparative meagreness of the ceramic content of certain other areas; and these latter show also a variability in the raw material of the megaliths themselves, since they are not of the deep southern granitic cist variety. The physiomorphological bias is implicit in their using not only sandstone and trap which are met in the area, but also employing a coursed structural building technique, as contrasted with the large sheet slab quarrying and assembling techniques. It is certainly also seen that even in the sandstone area, the early megalithic types should have largely depended upon the easily lifted laminated sandstones of the tilted and warped formation so prolific in the region, and thus the slab sheets usually having a length disproportionately more than its width, of sandstones, readily levered up from the bare rocky outcroppings, are employed.

The variant practice of *structural* megaliths is apparently of a different ilk and should thus merit very careful further investigation. Its importance and significance lies mainly in its displaying not only monument types not commonly met with in the rest of India, but also in their recalling forms which are certainly common with some of the extra-Indian types and within India, in contexts of stone-quarrying unrelated to the granitic slab-cists of the lower south. This should mean, on the one hand, that they do carry a germ-potential of earlier megalithic culture regimes, in their tomb architecture primarily, and on the other, that they have a cultural and geographical context different from the evolved megalithic tomb culture in its heyday in southern India. The key region would seem to be the upper Karnataka and the key trail of dispersal for impulses towards it, from the coast on the one side, and through Rajasthan and central Indian tracts on the other.

We would do well thus to systematise the distinction between (a) granitic slab megaliths (b) sandstone slab megaliths, (c) granitic rude stone boulder monuments, (d) trap or sandstone rude block megaliths, (e) sandstone, or other coarsed structural tombs, above ground, and (f) similar tombs partially below ground with cairns hiding them. It would be seen that it is mainly in the north Karnataka that the boundary of the megalith often tends to be square or rectangular instead of the circular. This would, by its persistence, call for a legitimate explanation. Such an explanation may have to rely, to a greater extent, upon the building techniques already gone before, especially due to its coursed character, and should thus be attributed to more than one kind of megalithic arche-type entering the argument. It is in the Baluchi tract that funerary or cinerary chambers, almost entirely built of coursed stone blocks and standing above the ground and often of the type of a room, exist, as in the Londo ware sites. Such a provenance could not be without its diffusionary trail. On the other hand, the Egyptian contribution to the megalithic monument would seem to be primarily certain shapes and forms of the black topped ware in addition to the sarcophagus model, though in alabaster. All this would indicate that the 'megalithism' that entered India was a snow-balling process and had been an agglomerate of many traditions, structural and ceramic, by the time it reached the Deccan, by more than one route. One thing that is perhaps evident in this argument is that there was hardly any significant impact of the South East Asian culture in this process, although this aspect has not been investigated in as detailed a measure as one would like.

Orientation of tomb

A concerted attempt should therefore be made to plot all true, false, and dubious megalithic types especially in the upland region extending from the Orissa plateau to the Rajasthan and downwards across the lower Vindhyas towards the north Karnataka zone. The orientation, if any, of the megalith is of great significance in grouping these into varying types. The north Karnataka group tends to have an essentially *southward* orientation, while the more southern of the better known megaliths of South India, whether cists or dolmens, have a primarily *eastward* orientation of the tomb. This, by itself, should urge further work in examining the basis, if any, for this peculiarity and only more monuments discovered in the upper Deccan and

Vindhyan plateau would make this task easy, although the zone of critical transformation in orientation would seem to be north Karnataka in the Belgaum, Dharwar and Bijapur Districts. The significant fact that at Junapani an east-west orientation is more common would seem to show that they might be relatively later to the megaliths of the north Karnataka.

The fact that in north-west Karnataka also, we have sandstone tombs as at Terdal etc., of coursed rubble construction variety and heavy cairn pack, with a remarkable homogeneity of tomb forms—recalling morphological analogus from west would reveal that these might have been carried in dispersed impulses to the northern fringe of the Vindhyan plateau in early historic times, and might have resulted in the sporting of these U. P. megalithic *milieu*. The seemingly non-iron context of the Banaras megalithic tombs does not appear to be adequate evidence of their being the progenitor types to the megaliths of the peninsula, for, if at all, in the evolving context of the 'black and red ware'—using people, they needed any special impulses or impetus, it was in the variety of tomb model of finite shapes to choose from or to adopt. This context is singularly lacking in the U. P. megalithic *melange*.

The north western Karnataka, however, being near to the west coast, as in the Belgaum and Dharwar districts and with its suggestive array of megalithic shapes, with the avid, and readily accepted use of sandstone material for megalith, with the peculiar difference in orientation that they evince from this deeper southern types—in their being invariably south facing in the tomb opening—and in their relatable affinity in tomb morphology, pottery etc. with the peninsular Iron Age culture vestiges, and in their being in a relatively incipient stage of ritual specialisation of pottery as compared with the evolved 'megalithic' tomb pottery of the peninsula, would appear to be adventitiously located as the springboard for the reception and dissemination of the megalithic architecture from westerly sources into the peninsula in all direction, to the extent cultural sociology of the regional *milieu* permitted ready acceptance. The south, in this respect, was more receptive than the central Indian region, thus resulting in the tardy diffusion of megalithism in the latter area, whereas the lower part of the peninsula perfected the megalithic tomb architecture—now in granite—with an Iron tool craft-bias, pottery, ritual slant and, no less, the assemblage of choice antiquity categories like beads, stone and bone objects to go with the tombs, becoming the cultural counterparts of the best 'megalithic' traditions of West Asia, and the Mediterranean regions.

We may now, summarily assess the data on hand :

1. Megaliths and black and red ware have had no incipient co-existence in India.
2. Megaliths, however, are found mostly in black and red ware associated contexts and in Iron Age strata
3. The typological and regional forms of megaliths differ from region to region.
4. Megalithism might have arrived into India from more than one source but only from the West and equally by overland route, along the coasts or across the sea.
5. By around *c.* 300 B. C., it is already well established in a large part of lower southern peninsula.
6. The shapes of pottery, megaliths, coffins etc. recall analogues in Egypt, Palestine, Crete, Persia, and Arabia.
7. Megaliths in India were seemingly the sociological index of non-Aryan people given to burial, as different from cremation, which was an Aryan trait in India.

The 'megalithic' types recorded from Uttar Pradesh may be dealt with here. At the outset, it should be stated that these do not have a genetic kinship by way of tomb architecture individually and collectively to any of the known megalithic types of the peninsula. These sites are distributed in Banaras, Mirzapur and Allahabad districts and are located on river banks at the foot of hills. The raw material is almost invariably sandstone. The type sites are Hathinia, Kotia, and Banimilia Bahera respectively for the three regions. The excavated evidence reveals the following outstanding points :

(a) The presence of the black-and-red-ware is only very feebly and indistinctively attested, as one among many other crude and refined red and black wares. Its shapes, where known, are of the evolved facies, as for example, the flattened base, hollow or solid pedestal, sharply carinated vessels etc. at Kotia. The Banaras area has no pottery.

(b) The Banaras area reveals no iron metal, but has microliths instead, while the Allahabad zone shows iron in some cases in well-known 'megalithic' types like spear-head sickle, adze, arrow-head etc.

(c) The tombs themselves have a superficiality or stylization in their erection, without well-formed chambers of circle stones. No port hole is found in any of the types while Banaras area is said to show a general north-south orientation, although no finite orienting element is available. Allahabad area shows a east-west orientation, coursed rubble construction, heavy cairn pack, appearing almost like barrow-heaps on the surface, with an indistinctive circle stone, lack of any clear cut mode of placement of burial furnishing in the tombs, all revealing a degenerate practice.

Altogether, they admit of only a two-fold classification, namely, pit circles with heavy cairn, and rubble cist-dolmen—with or without circles, capstone or cairn. The shape of the coursed rubble chamber (called tumulus by their excavators) had a prevailing irregularity, but rectangle or square was as much prevalent as circle or oval shape. The coursed construction is noted only in Mirzapur area. Thus, there is not only a differentiation in prevalent or preferred types, but also a decadent and almost perfunctory approach to burial rite noticed, in all these places. The current presumption is that Banaras group might be pre or non-Iron while the remaining two might be post-Iron Age.

Comparing and contrasting the types and pottery with peninsular tombs, we may note that :

(1) The mere occurrence of black and red ware in the U.P. group of tombs need not make them related in cultural category with the peninsular, since diagnostic elements in ceramics as well as tomb form and furnishings are absent.

(2) The dissipated character of the pottery content and tombs in multiple slab variety (even in an area where large slab quarrying in sandstone is relatively an easy process), does not seem to evince the 'megalithic' architectural impetus.

(3) The presence of certain familiar iron tool types in the Allahabad zone should certainly admit of being a borrowal

there, perhaps from the peninsula from a site, such as Junapani of Nagpur area; which is the nearest source.

(4) The lack of any fixed orientation for the tombs is significant and cannot be taken as a formative, but only as a fissiparous approach to the cult of the 'megaliths' by its authors.

(5) The distribution of the tombs in a site, too close to one another, would seem to suggest, again, a degeneration of the tomb-ritual, and the absence of human bones and the presence of animal bones increases the anomaly.

The overall effect is, therefore, that these so-called 'megalithic' tombs and sites, formed an indigenous survival of the cult of the stone tomb erection by the descendants of the 'black and red ware' using people in early historic times, and their very multiplicity of structural and antiquity types would speak of a highly nondescript, funerary culture-assimilation, leading to a lack of true 'belonging' to the main stream of the 'megalithic' stage within the Iron Age cultures of the peninsula. They should thus be considered as the result of *local ceramic survivals* impacting with dispersal of the 'megalithic' tomb architecture from the Deccan in the early historic times, and a broad kinship in tribal or ethnic characteristics might, perhaps, be the only thing that binds them with the true 'megalithic' counterparts in the south.

Problem of Black and Red ware : A Technological Approach

G. G. Mujumdar

Introduction

Dr. Subbarao in his *'Personality of India'* has described this typical pottery as a crucial ceramic type in Indian Archaeology. A typical Black-and-Red ware pot is completely black from inside and the rim portion of the outer surface is also black; while the rest of the outer surface has reddish shades. The development of this dual colour has been ascribed to a process called 'inverted firing.'

Inverted firing has been explained and understood as a process of firing the pot in the usual potter's kiln wherein the pots are purposely kept in an inverted position and that during the process of firing, fire coming in contact with the inside portion as well as the rim portion of the outer surface causes it to become black due to reduction whereas the rest of the outer portion becomes red because of its contact with oxygen and consequent oxidation. This effect of dual colour according to this explanation takes place in a single firing.

Occurrence

This type of ceramic ware covers a very wide span both in space and time. In India, this ware has been found in the Harappan levels at Rangpur, Rupar, Lothal, Alamgirpur, Prabhas etc. It occurs with the Painted Grey ware in the Saraswati valley, but at Atranjikhera and at Noh (Dist. Bharatpur) and also at Chirand and Sonepur (Bihar), it is said to occur in the lowest levels unassociated with the Painted-Grey-ware. In the Chalcolithic of central India, it is found at Nagda, Ujjain, Navdatoli, Ahar etc. In the same context, it is reported at Rajar Dhibi in West Bengal and at Chandoli, Tekwada, Prakash etc. In the southern Neolithic it occurs at Tekkalkota, Hallur, Sangankal and Piklihal. It also occurs as a typical Megalithic ware especially in the South. In the early historic period it is reported in Satvahana levels as well as Russet Coated ware. Thus in India, it occurs from Rupar in the north to Brahmagiri in the south and from Rangpur in the west to Rajar Dhibi in the east.

Outside India a similar pottery but chronologically much earlier than any of the Indian types occurs in the Pre-Dynastic Egypt and has been described as 'Black topped ware'

Varieties

The main variations in this ware are :—

(a) the usual Megalithic Black-and Red ware, mostly unpainted but with a distinct brownish red or reddish colour and typical gloss.

(b) Non-Megalithic Black-and-Red ware where the gloss may or may not be present and the colour is not as distinctly red as the Megalithic variety but lighter shades exist.

(c) A painted variety (with white painting) is also present.

(d) A variation of Megalithic ware occurs as Black-and-Grey at Prakash (Tekwada).

(e) Occasionally the wholly black pot is encountered in Megalithic Black-Red-ware (Brahmagiri).

Problems associated

The main problems associated with this typical ceramic ware are :—

1. In view of a very wide span of space and time it covers, whether the Black-and Red wares of different periods and different regions have any genetic relationship with each other.
2. Whether any similarity in the technique of manufacture exists for these wares of different regions and different periods and
3. Whether the technique of manufacture is of independent origin in India or borrowed from outside especially Egypt in view of the latters relative antiquity.

Thus it will be of interest to see whether the technology of this typical ware is of any help in elucidating any of the above problems.

With this view in mind Prof. Sankalia referred this problem to the author about 4 months ago when he was writing his report on the Black-and-Red pottery for Ahar excavation report. He became more interested in the problem since at that time he came across a statement regarding Egyptian 'Black topped Badarian pottery' by Lucas.

Lucas who worked on this ancient Egyptian ware observed that the 'black topped pottery' was made by a double process, i. e. by double firing. First the pot is fired in the usual way, under oxidising condition, when it becomes red. Before the second firing, some suitable carbonaceous material is applied to the entire inner portion and the rim portion of the outer surface and the pot again fired. In the second firing the portion to which carbonaceous material is applied turns black while the remaining portion remains red.

A beginning has been made in our laboratory in trying to understand the possible technique of manufacture of this ware and the problem is still in experimental stage. This paper may be regarded as something like an announcement of the beginning of our effort in this direction.

Main Observations

The main observations of this preliminary study are as follows:

1. The idea of inverted firing technique is something like a misnomer because the potter's kiln usually houses hundreds, if not thousands of pots dumped in any position, erect, inverted, horizontal or at any angle. These pots without exception become red if the kiln is of oxidising or become black if it is of reducing nature. Thus the ordinary kiln without any special arrangement can only produce either a wholly red or wholly black pot irrespective of its position in the kiln.
2. To produce the double colour effect in the same pot some special arrangement must be made. After making such arrangement the pot can acquire dual colour effect by any of the following processes :—

(a) single firing,

(b) double firing when the pot is fired red first and after subjecting it to special arrangement and refiring it when the part protected by this special arrangement becomes black (Lucas's idea of Egyptian firing technique).

(c) double firing but this time firing the pot black first and refiring it (with special arrangement) when a portion becomes red.

The special arrangement referred to above consists of covering and maintaining a close contact of carbonaceous material with the inside portion as well as rim portion of the outer surface of the pot.

Probable Megalithic practice

After this preliminary study, it is felt, that the Megalithic Black-and-Red ware was more likely to have been made by this third (c above) method because firstly the black of the Megalithic ware is jet black, secondly, the accidental occurrence of wholly black pot in the same fabric (Funnel shaped pot at Brahmagiri) and thirdly, the occurrence of occasional Black-and Grey pots in the same context (as at Prakash and Tekwada). This is because the colour becomes jet black when the inside and the outside rim area is subjected to reduction twice. Similarly the presence of an isolated wholly black pot indicates that the pots were fired black first and out of the lot, this pot remained to be refired and thus remained entirely black. Occurrence of Black-and-Grey pots also might be due to some unfavourable position or condition of the pot, it could not be completely oxidised to red but remained half-way in the form of grey shade.

Observations on the Megalithic Skeletal Remains

D. K. Sen

The purpose of this paper is to describe the population or populations that were responsible for the so-called 'Megalithic culture' of south India. The only way to do this is to study the skeletal remains from the megalithic burials in the approved scientific way. I have accordingly tried to give below a review of work done on the materials and published, and then to draw my own conclusions from the data.

Not all the burial sites that have been excavated produced skeletal remains. There are only six sites from which skeletal remains have been found and reports published thereon.

(*a*) *Brahmagiri*

There are descriptions of seven skulls of which four belonged to adult males, two to adult females and the rest to sub-adult children. Except for one child which comes from the open burial site, the rest of the skeletons come from the cist circles or pit circles. All the measurements have been taken on restored skulls, many important parts of which are missing and have been adjusted approximately. Only two femora also restored could be used for estimation of the stature.

(*b*) *Adittanalur*

Only seven very fragile and broken skulls could be restored to reasonable shape on which some measurements could be taken (Chatterjee & Gupta, 1963). Of these, five belonged to males and one to a female. The remaining one is so bad that hardly any measurement could be taken on it.

(*c & d*) *Nagarjunakonda and Yeleswaram*

These two sites are on either banks of the river Krishna. From the former site only one skull could be measured (Gupta, Dutta & Basu, unpublished). This belonged to a male. From the Yeleswaram site five skulls could be subjected to measurements (Gupta & Dutta, 1962). Only two of these have certain degree of completeness, while the other three are represented by the top of the skull (*calva*) only. The skulls have not been restored. Some long bones found are of sufficiently good condition to allow reasonably accurate measurements.

(*e & f*) *Piklihal and Maski*

Two skulls, one male and the other female have been measured from Piklihal (Ayer, 1960). Only one male skull could be measured from Maski (Sarkar, unpublished).

Discussion

It will be seen from this short list that most of the measurements have been taken on restored skulls, and that the number of skulls at any one site is very meagre. In fact Chatterjee and Gupta, the authors of the report on the Adittanalur skulls mention that the application of any statistical test and use of statistical constants was not attempted to the small size of the Adittanalur data. Sarkar also mentions that the data on the Brahmagiri skulls is very meagre. The smallness of the data at each set, however, has not deterred the respective authors to come to conclusions about the racial origins of the persons whose skeletal remains have been subjected to matrical treatments. Thus on the basis of four skulls from Brahmagiri, Sarkar comes to the conclusion that the type represented by the skulls cannot be obtained in India and must be foreign in origin. He mentions this type as Scytho-Iranian. Again on the basis of one child's skull he concludes that it must have belonged to an Australoid. He explains the presence of these two divergent types in the same megalith as an indication of hybridization.

Chatterjee and Gupta mention that in Adittanalur skulls three show Veddid-Australoid affinity, five show Mediterranean type and two indicate 'armenoid branch' of Mediterranean and proto-Australoid types respectively. Thus from a handful of skulls from Adittanalur, the authors detect people with several racial origins, Veddid-Australoid, proto-Australoid which are presumably autochthonous, and two varieties of Mediterranean types.

These two examples are sufficient to show the method employed by the authors in interpreting the measurements of skeletal remains found in the megaliths. I have shown elsewhere (Sen, 1967) that this typologic method vitiates the data interpretation on skeletal remains of North and West India also. I have further shown in the same publication, in great detail, the fallacy of the typologic method, and I need not go into the matter once again. This may be stated in brief as follows :—

(1) The typologic method involves subjective thinking about ideal types.

(2) This method ignores the genetic background of traits, and hence ignores the phenomena of normal variation of the same.

(3) Linkage of traits in individuals is also misunderstood.

For all these reasons and others, typologic interpretation of metric data is no longer in vogue. Instead, usual statistical method is applied on the distribution of traits in individuals forming a population. In this way what we describe is not any individual, but a group, thus, for instance, we do not try to find out the origin of this person or that person, but only that of the group including the individuals. And further it is assumed that the individuals forming the population share a common gene pool.

I have, therefore, thought it fit to re-examine the skeletal finds from the megaliths in this light. All the data have been taken from published reports. The foremost difficulty in treating archaeological data lies in the small size of the sample at each site which will be representative of the respective population. The skeletal materials coming from the megalithic sites are no exceptions. I have, therefore, somewhat arbitrarily pooled the data from several sites and present its statistical constants. This is shown in table I. I have only chosen a few measurements which could be taken properly on the restored skulls, and also which can be taken on the largest number of skulls. The samples for different traits thus vary from 18 and 9. These include the maximum length, breadth and height of the skull, the minimum width of the forehead and the height and width of the nasal aperture.

It is of interest to compare the values in table I with those of the Harappan data (Sen, 1967) in table II. It will be seen from the mean values that in auricular height, least frontal breadth, nasal height and nasal breadth, the two series are very closely approximated. There is, however, considerable difference in the values of the head length and head breadth. The Harappa skulls are much longer and narrower than those of the present series.

An idea of the variability of the traits can be gauged from an inspection of the column under coefficient of variation (C. V.) in both the tables. It will be seen that in comparison to the Harappa series, the present one has larger variability in almost all the traits except those of the nasal height and width. In the dimensions of the nose, therefore, the Harappans and the megalith builders show similarities, both in the mean values and in their variation. In two other characters, the mean values are similar but the variations are greater in the megalith builders than the Harappans. The two series are very different in both the means and variations of the two dimensions of the head, length and breadth.

It appears that the variations obseved in the nasal dimensions of the present series is of the usual degree as found in any homogeneous series of population. In that case those found in the other dimensions may result from a mixture of various morphological characteristics, but not differing much in their nasal traits. On the other hand the variations may arise fortuitously, being based on measurements on parts of the skull more disturbed by distortion and consequently subjected to extensive restoration. When we know that a large scale restored skull can give only a rough approximation to the original, it may not be wondered that comparatively large variation in measurements will be the outcome. To solve the problem two conditions must be fulfilled; the first is to get adequate number of skeletons from a given region, and secondly, we must get hold of fairly good undistorted skulls. Many megalithic burials have been excavated, but there are still numerous sites to be looked into. If skeletal remains have any value to the study of archaeological problems, a concerted effort by archaeologists and anthroplogists must be made without further delay.

Table I

Statistical Constants of Megalithic Population (Male)

No.	Characters	N	Mean	S.D.	C.V.
1.	Maximum cranial length	14	181.14	8.93	4.93
2.	Maximum cranial breadth	18	138.50	9.54	6.89
3.	Least frontal breadth	15	96.33	4.67	4 85
4.	Auricular height	9	116.11	5.56	4.79
5.	Nasal height	9	48.78	2.54	5.21
6.	Nasal breadth	9	26.67	2.24	8.40

Table II

Statistical Constants of Population of Harappa

No.	Characters	N	Mean	S.D.	C.V.
1.	Maximum cranial length	22	188.00	4.53	2.41
2.	Maximum cranial breadth	20	135.68	5.41	3.99
3.	Least frontal breadth	19	95.82	3.21	3.35
4.	Auricular height	16	116.06	3.18	2.74
5.	Nasal height	22	52.16	3.04	5.83
6.	Nasal breadth	21	26.31	2.24	8.51

References

1. Ayer, A. Ananthanarayana, (1960), Report on Human skeletal Remains excavated at Piklihal (Deccan) from a site of Chalcolithic Culture in *Piklihal Excavations* by F. R. Allchin.
2. Chatterjee, B. C. & Gupta, P. (1963), *Skeletal Remains from Adittanalur*, Memoir No. 3, Dept. of Anthropology, Govt. of India.
3. Gupta, P. & Dutta, P. C. (1962) "Human Remains from Yelleswaram" *Man in India*, Vol. 42 No. 1.
4. Gupta, P. Dutta, P. C. & Basu, A. (unpublished), *Human Remains from Nagarjunakonda.*
5. Sarkar, S. S. (1960), "Human Skeletal Remains from Brahmagiri", *Bull. Dept. of Anthropology*, Vol. IX, No, 1.
6. Sarkar, S. S. (unpublished), *Human Skeletal Remains from Maski*.
7. Sen, D.K. (1967), "Ancient Races of India & Pakistan : A study of Methods." *Ancient India*, No. 20–21.

Sociology of Burial Practices and Its Bearing on the Problem of Megaliths

S. P. Gupta

Much has been written on the subject of the disposal of the dead in various societies of the world. It presents a good picture of the various modes by which a dead body is disposed of in a particular group of people. Reports of archaeological excavations give minute details of the burial monuments and the arrangements of the skeletal remains and the accompanying goods. As a result of these studies, often, we come across more or less identical practices followed by two societies, situated widely apart geographically, ethnically and culturally. Similarly, it is also observed that in a single society there are varying practices followed simultaneously. These two features of identity and variety have been found both in the present and the past societies, as shown by the anthropologists and the archaeologists respectively. The question is, what lies behind these two features? There are three sets of scholars who deal with this question—theologians, anthropologists, and the archaeologists.

A theologian, who deals with the subjects of religion and ethics, sees the cause of the variety (in the practices of the disposal of the dead) in the concept of 'a minimum period of full normal life' that a particular religion offers to its adherents. This concept implies that the life does not start unless an individual attains an age at which he can walk, talk, think and act. This age-limit varies in different religions, ranging from one year to twelve years, often indicated by some special ceremonies, e. g. *Annaprāśana*, *Karṇachhedana*, and *Upanayana*. Some of the religious concepts, like the Hinduism, maintain that manhood is the highest form of life and that one gets it only after various virtuous deeds in previous births. They also believe that in case a person dies prematurely, it implies that some evil deeds of the past life, or some evil spirits of the family, were responsible for that accident or disease by which the untimely death occurred. The concept of evil spirits seeks the cause of a premature death in the displeasure of an unclean spirit. Many tribal groups in

Central India exhibit such ideas in different mortuary rites.[1] Once a society accepts these reasonings, it also accepts, as a natural corollary to it, the punishments in the form of premature death to its members and does not blame God or germs of disease for such a death. It also accepts a different mode of the disposal of the dead that its religion prescribes in such cases, and which is different from the normal one allowed to a man dying with an honourable record.

Though the normal form of burial in the Lo Dogga[2] tribe of Africa is 'chambered grave with flag-stones', children below three are not considered to be human beings, and therefore, get 'mound burials', i.e. over their body an earthen mound is built besides the first cross-road on the path leading to the mother's home. Similarly, amongst the Santhals[3] of Bengal though the normal mode of the disposal of the dead is cremation, when a child dies, he is buried in a pit covered with earth. In the case of a dead pregnant woman, they insert an iron nail in the sole of the foot for the reason that 'churinbhut', an evil-spirit, may not come out of the grave. The Mandadan Chettis[4] of the Gudalur region of south India cremate the dead bodies of the old and prominent persons of their community but give a burial to persons dying in an accident, or of a contagious disease. In many of the African tribes, a woman dying in child-bed is buried and deprived of ordinary rites. She is supposed to be under a curse; and buried outside the village among the Oraons of India.[5]

Take the case of the Hindu society. In some of the places, particularly in Uttar Pradesh, it has been observed that a person dying of snake-bite, contagious disease, accident, or before *Annaprāśāna* or *Upānayāna* ceremony, or a woman dying without bearing a child, etc. are denied cremation, i.e. the touch of the Sacred Fire, and are either buried, or cast away, or exposed. In many other places where adults of this category are not denied cremation they are denied many other rituals which go with a normal cremation. Terms like *anagnidagdha* (uncremated), *paroptah* (cast away); *uddhitah*

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1. Crooke, B. A., "Primitive Rites of Disposal of the Dead with Special Reference to India", (N. S), Vol. I, 1899, pp. 271-294.
2. Goody, J., "Death and Social Control Among the Lo Dagga", *Man*, 1955, p. 204.
3. Biswas, P. C., *Santals of the Santal Parganas*, (Delhi, 1956).
4. Krishna Iyar, L. A., Balratnam, L. K., *Anthropology in India*, (Bombay, 1961), p. 176.
5. Ray, S. C., *Oraon Religion and Customs*, (Ranchi, 1928) p. 186.

(exposed) are often met with even in the Vedic litearture.[1] To me, they all seem to indicate the same negative religious sanctions, the positive stood for cremation.

However, to an anthropologist, who deals with the present human societies, and, therefore, has an easy access not only to the material aspects of these practices, but also to the various motifs, concepts, beliefs and rituals connected with them these two features of identity and variety in the modes of the disposal of the dead mean something entirely different. He finds this variety in the 'social standards of behaviour' and 'class distinctions'.[2] Thefts, unpaid debt, committing murder of father, mother, or priest are normally taken to be unapproved social behaviour. The criterion of socially approved and unapproved behaviour is the moral concept that a society evolves from time to time under the influence of its elders, and some dominant social group, perhaps that of the priests or the warriors. Such a concept, leading to the formation of social rules and regulations, is evolved to keep the society compact and regulated. It tries to secure its individuality, purity, and morality. It is, therefore, quite explainable that the people guilty of unapproved social behaviour are denied the socially approved ceremonial modes of the disposal of the dead.

In ancient Greece,[3] executed criminals, though buried, were denied the customary rites; traitors and those guilty of sacrilege were refused burial at home. Similarly, 'Nossi-Be', out-casts from the family, were not buried in the family grave. Amongst the ancient Romans,[4] where cremation was the normal mode of the disposal of the dead, murderers, and persons committing suicide were buried. A cock, the emblem of impiety, was sewn up in the sack in which the dead body of the parricide was interred. In medieaval Europe, no burial could be accorded to one who died without clearing his debts until his creditors were satisfied.

Till very recently, burials in churchyards have been refused to unbaptized children, lunatics, persons excommunicated, etc. Not only that, the northern side of the yard is normally, kept for those who transgress the normal laws of the community, e.g. those committing homicide and suicide. Amongst the Lo Doggas of Africa sinners of suicide, murder, witchcraft and sexual intercourse outside human habitation are given 'trench burial' near a water-course. Similarly, those who commit suicide amongst the Marias[1] of Madhya Pradesh, are buried or cremated not in the regular burial or cremation ground, but some distance away. Persons killed by tigers are cremated and no offering of food and dancing dresses are burnt with them. Amongst the Hindus also, a murderer, a parricide, a person who has killed a Brāhmaṇa and others guilty of anti-social behaviour are denied many of the rituals usually connected with cremation. Leshnik has grouped some of these and other factors observed among Central Indian tribes into class distinctions of four types: "Within the tribes, distinctions are made in the funerary treatment of certain classes of persons. Broadly speaking, these classes are four, viz. (a) persons dying in a state of taboo, i. e. deaths caused by violence (murder, suicide, snake-bite, tiger, drowning etc.), an epidemic illness (small pox, cholera, typhoid, leprosy) or occurring during pregnancy and in child-birth; (b) infants, young children and unmarried adults; (c) honoured personages, and tribal elders, and (d) the remaining members of society."[2]

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[1] Macdonell and Keith, *Vedic Index of Names and Subjects,* Vol. I, p. 8.

[2] Leshnik, L.S., "Archaeological Interpretation of Burials in the Light of Central Indian Ethnography", *Zeitschrift Fur Ethnologie.* Band 92, Heft 1, Braunschweig, 1967, p. 27.

[3] *Encyclopedia of Religion and Ethics,* Vol. IV, pp. 472-75.

[4] *Ibid* pp. 505-09.

To an archaeologist, who has the limitation of dealing with only the material remains of the past—often unaccompanied by any written records—, such identical modes may mean some sort of a definite cultural contact between two cultural groups; even actual diffusion from one culture to the other. To him, the simultaneous existence of a variety of modes in a society may mean the combination of various peoples and cultures in the population of that society. Such a conclusion is strengthened when the skeletal remains show the existence of different racial groups. It is because of this that the archaeological literature often mentions 'chambered grave people', Round Barrow people', 'Megalithic culture', etc. rather than offer classifications in terms of anthropological or language divisions. At the back of it lies the concept that the burial custom is a stable trait,

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1. Elwin, V., "Funeral Customs in Bastar State", *Man in India*, Vol. XXV, 1945, p. 93.

2. Leshnik, L. S., *Ibid.*

which, in fact, is often variable. Sarkar[1] writes, "......So much of human feelings are associated with it that no man except in case of exigency would be prepared to change the traditional funeral ceremony". It may be correct in the case of economically and philosophically developed society with bias for traditions (the Hindus of today and the Harappans of the past), but societies backward in these respects and dominated by magical aspects of religion, as many tribals are, burial custom is much less stable. Kroeber[2] writes, "...... the variations between adjacent peoples, and the numerous instances of coexistence of several practices within one population constitute a powerful argument for instability".

However, the archaeologists' terminology may not really be correct, so far, as it can be challenged by theologians and anthropologists. For example, among the Lo Dogga tribe, three types of burial customs, viz. the 'mound graves', 'trench graves' and 'chambered graves', are due to the positive and negative social sanctions, different social values, and some religious or magical beliefs, and not due to the presence of different peoples or cultures.

We may further take a few examples from the Indian archaeological data to illustrate the point.

After the fall of the Harappans, at Harappa we have a rather short-lived (probably, not more than a couple of centuries), culture, called 'Cemetery H' culture[3] (circa 1600 B. C.), Here we have the evidence of four types of burial practices: extended burial in an oblong pit, flexed burial in a long pit, post-exposure urn burial and post-cremation urn burial. Since the entire culture coutinues to remain the same throughout its occupational debris, we may not be justified to relate the variety of modes with the variety of culture or of people in the society represented by 'Cemetery H'. This variety may equally be interpreted in terms of positive and negative social sanctions which lay down the standards of social behaviours—different they are in different cases.

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[1] Sarkar, H. V., "Disposal of the Dead at the Indus-Valley and its Survivals, Among the Aboriginal Peoples of India", *Man in India*, Vol. XXXI : 1 ; 1951, p. 23.

[2] Kroeber, A. L., "Disposal of the Dead", *American Anthropologist*, N. S. 39. 1927, p. 312.

[3] Vats, M. S., *Excavations at Harappa*, (New Delhi, 1940), pp.2 03–45.

The adult burials of the post-Harappan Chalcolithic culture met with at Nevasa,[1] Chandoli,[2] etc. (circa 1000—1300 B. C.) invariably show the absence of almost all the bones below the anklets. It may be quite safe to interpret it in terms of the negative social sanction or 'class distinction'. These might be the burials of 'sinners' of one or the other kind whose evil spirits are checked from walking or returning home.

There is still another very interesting case in this connection. Belonging to the period between the 2nd half of the 1st millennium B.C. and the 1st half of the 1st millennium A.D., there exist a number of burial types, particularly, in the region south of the Gangetic Valley which are included under the common heading of 'Megaliths'. Often a number of these types are found existing side by side in one and the same cemetery. Maṇimekhalai and Śilappadikāram, the two epics of the Sangam literature of the Tamilnad, embodying the traditions of the early centuries of the Christian era, mention the existence of at least five different modes by which a dead body was disposed of, viz. exposure, cremation, cist burial, urn burial and pit burial.[3] The question is whether all these modes were the normal accepted types of the 'megalithic' people or not? Whether the so called megalithic culture comprised only one people having a common material culture, religion, traditions, etc. or it had many peoples with their individual cultural traits but they all shared the common practices in the burial custom? Though it is difficult to be precise in answering these questions at the present stage of our knowledge, yet, one thing is certain that at least in the case of South Indian megaliths the material remains show some definite traditions of a common material culture.[4] If so, we may have to assume that one out of the five modes was the accepted type of normal burial and the remaining resulted out of the positive religious and/or social sanctions or 'class distinctions', at least in the lower Kaveri region, the scene of the epics.

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[1] Sankalia, H D., *Indian Archaeology*, 1960–61, p. 20.

[2] Deo, S. B., *I A R*, p. 27.

[3] Srinivasan, K. R., "The Megalithic Burials and Urnfields of South India in the light of Tamil Literature", *Ancient India*. No. 2 pp. 12–13.

[4] The underlying unity is probably expressed in the widespread use of the Black-and-Red Ware, iron implements, presence of horse-bits or bones of horse, post-exposed and collective nature of the disposal of the human skeletal remains.

N. B. :—Unfortunately, for the last two decades or so, we are looking for the common elements only, over-looking the differences in details in each industry associated with the megaliths. Once we do it, I am sure, regional and chronological differences will be known. After all, from circa 1000 B. C. (C—14 dates of the lower megalithic levels at Hallur) to circa 100 A. D. (Roman coins in cists), if not more, i. e, for a period of 1100 years, no culture can ever remain stagnant and that too in as wide an area as that of the peninsular India.

In order to find out as to which was the commonly accepted form of burial there we may again look into the references in the Sangam literature.

'On the death of the Cola King Killi Valayan, the post Aiyur Mudavanar asks the potter to make a large, wide mouthed urn for entombing the exalted monarch' (Puram. 228, lines 1-15), 'A mother whose daughter has run away with her lover prefers death to a life exposed to scandal.........and apostrophizes the God of Death as follows 'Oh powerless Lord of Death, that cannot take away my life so that my body may be entombed and covered in a big dark urn' (Narrinai, 271, lines 11-12) Similarly, poet Peruncattanar wished to be entombed in an urn (Puram, 238, lines 1-5).

These references make it quite clear that the normal mode of the disposal of the dead in this region was urn burial, irrespective of the fact whether the person died was a king, or a saint, or an ordinary member of the society. No doubt, in some of the societies burial for a king, or head of the tribe, or the rich may be more elaborate than that of an ordinary man, nevertheless, if it is like that of a commoner, it shows the democratic set-up of the widely accepted practice.

However, in the present case there may be one more interpretation. Different burial types belonged to different 'sets' of people. If it is so, we shall have to find out the basis of this social distinction for the purposes of different burial practices. In the absence of any documentary and traditional evidence any opinion on the issue shall always remain subjective, and, therefore, howsoever valid the argument may be, it should not be made the only basis for any sober conclusion.

All these cases clearly show that apart from other factors, behind the different burial practices also lie the different standards of social behaviour and 'the concept of a full normal life' and that unless that is known, certain interpretations based only on material remain within a sepulchral monument may be far from the truth. Neither the presence of different racial elements amongst the skeletons of the graves of a single culture at a given site, nor the presence of different modes of the burial practices shall ever justify the archaeological interpretation of diffusion and contact. Unless and until there are other traits of a different culture-complex within the graves, they need not be taken to belong to another culture in any sense of the term. Different types of burials may simply denote different religious and social sanctions under different conditions of death and different concepts of full normal life. Diffusion or contact for identity must be proved otherwise it is accidental.

Megalithic Tradition in India

R. C. Gaur

Different types of megaliths have been reported from almost all parts of India right from Kashmir and border land of Laddakh to Malabar coast and from Assam to Baluchistan. This proves beyond doubt that megalithic remains neither can be product of one people nor can belong to one particular period of the Indian History. No concrete effort has so far been made either to determine the chronology of the Indian Megalithic culture or to classify all the available groups. Although Dr. Aiyappan[1] counted as many as thirty types, his list is in no way comprehensive. Similarly, V.D. Krishnaswami's[2] classification is also not complete in all respects.

So far the chronological assessment is concerned, it has been changing. On the basis of Brahmagiri excavation, Wheeler[3] for the first time thought that the megalithic culture in South India commenced in the beginning of the 3rd century B.C. Later on an improvement was made on him by Dr. Banerjee[4] who preferred a date bracket of 700 B.C. – 200 A.D. on the grounds of advanced technology of the iron goods found in the megalithic graves. However, a dolmenoid cist type of Megalithic-Neolithic phase (period II) has recently been dated[5] at Hallur in district Dharwar to 1005±105 B.C. by C-14 method. In this period well developed iron tools and Black-and-Red ware have been found together. It proves that the megalithic tradition in India is of still greater antiquity. The close affinities of the pottery from the burials at Bahal and the pottery below the cist at Brahmagiri show a definite pre-iron burial in central India with the same pottery.[6] Furer Haimendorf wants to associate the South Indian megaliths with those found in the Mediterranean region. If this is acceptable the Indian megaliths will easily be pushed at least to 2nd millennium B.C. Still greater antiquity may be postulated to the megalithic tradition if the explorations of Prof. Kosambi[1] in the district of Poona and its neighbourhood are taken into account. He explored a quite new series hitherto unnoticed. Although the site chosen as a rule for a megalith of this group is a natural outcrop, many of the boulders have often been shifted into position from some distance. Since these funerary monuments[2] are of undressed boulders and assembled in a cruder fashion, they may appear at first glance like natural pile and not artificial. However, on careful examination these have been found homogeneous. The best examples came from Varnand and Nayagaon-Satvai where the monuments look like cairn and dolmen respectively. Occasionally the megalithic boulders either have cup-marks or deep engraved designs or both. These monuments generally appear to be the commemorative piles though in some cases the possibility of their being burials of secondary nature may not be ruled out. Such evidences are available where the commemorative monuments were raised without bones. For example at Brahmagiri[3] in Megalith II no bone was found in the pits. Similarly at Sanur bones were not present in the excavated megaliths. It is note-worthy that the megaliths III & IV at Sanur which are actually delmenoid cist circles did not contain a single fragment of bone. Likewise except the remains of a crushed pot no other find has been reported from Megalith II at Junapani. Even at Nagarjunakonda where fifteen megaliths were opened at site 63 only nine could yield skeletal remains. The remaining six either had only splinters of bone oı no bones at all.

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[1] A. Aiyappan, 'Megalithic Culture of South India" *Presidential address*; *Anthro-Arch. Section. Indian Sc. Congress*, Nagpur, 1945.

[2] V. D. Krishnaswami, *Ancient India*, No. 16.

[3] R. E. M. Wheeler, "Brahmagiri and Chandravalli 1947, *Ancient India*, No. 4, p. 202.

[4] N. R. Banerjee, *Iron Age in India*, 1965, pp. 264.

[5] D. P. Agrawal & S. Kusumgar, "Radio Carbon date of samples from Southern neolithic sites" *Curr. Sc.*, Dec. 5, 1966, pp. 585-86.

[6] B. Subbarao, *The Personality of India*, p. 120.

Since the skeletal remains do not appear to be calcined in most of the cases, there was possibly no primary burning of the body even in the later days of the megalithic tradition. However, there has been a practice of post-cremation burial as well. In such cases either the bones and ashes were collected in the urns and then buried as probably referred to in the Satapatha Brahmaṇa[1] or the calcined bones, which remained over after cremation, were ground to powder and cast off or sprinkled as is still done in the Punjab.[2]

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[1] D. D. Kosambi, 1. *Myth and Reality*, Bombay, 1962, pp. 135-140.
2. "Megaliths in the Poona District" *Man*, May, 1962, Vol. LXII, No. 108, pp. 65-67.
3. "Prehistoric Rock Engraving near Poona" *Man*, April, 1963, No. 60 pp. 51-58.

[2] R. C. Gaur, "The Early Megaliths in Poona and Neighbourhood" Kosambi Commemoration Volume, Patna (in press).

[3] Cf. *Ancient India* No. 12, p. 26.

Although it is not easy to date the new series of megaliths of Maharashtra, they appear quite old. No pottery has been found so far with these monuments. But unless they are examined through excavation, it would be premature to call them of pre-pottery age. However, at present the only source for dating can be the scattered microliths near these monuments. The existence of pre-pottery microlithic culture has been reported by Fairservis[3] at Kile Gul Mohammed in Baluchistan in the first two phases, which may be dated prior to fourth millennium B. C. Similarly, Birbhanpur[4] industry was also dated about 4th millennium B. C. It appears that this microlithic industry continued for a considerable period since they have been found at several sites in central and western India and ultimately got merged in the industry of the Chalcolithic-Neolithic phase. The date of the evolution must go back probably to 2,000 B. C.[5] It is well known that microliths occur in a chalcolithic context in the first and second millennium B. C. at Brahmagiri,[6] Maski,[7] Maheshwar[8] and Nasik.[9] In this context the new series of megaliths discovered in Maharashtra pending their excavation, may be placed tentatively anywhere between 4th and 2nd millennium B. C.

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[1] Sat. Br. XI. 6-3-11. Prof. Weber thinks that this passage refers to the process of collection of the bones carefully after the corpse has been burnt with a view to their being placed in an earthern vessel and buried.

[2] R. K. Mookerjee, *Hindu Civilization*, p. 27.

[3] De. Terra & Paterson, *Studies on the Ice Age of India & Associated Human Cultures*, Washington, 1939, p, 233.
V. D. Krishnaswami, *Ancient India*, No. 16, p. 34.

[4] B. B. Lal, *Ancient India*, No. 14 (1958) p. 36.

[5] V. D. Krishnaswami, *Ancient India*, No. 16, p. 47.

[6] R. E. M. Wheeler, *A. I.* No- 4., pp. 18 off.

[7] B. K. Thapar, *A. I.* No. 13, pp. 4 ff.

[8] Sankalia, Subbarao & Deo, *South Western Jcurnal Anthrop.* IX, No. 4 (1953).

[9] Sankalia & Deo, *Report on the Excavation at Nasik & Jorwe 1950-51*, Poona, 1955, p. 138.

Thus with the passage of time new data has been coming for the extension of the date limits of the megalithic culture in India, though the general consensus is still in favour of putting this culture within a time-bracket of 1,000 B. C. to 2nd cent. B. C. on the basis of Hallur and Brahmagiri excavations.

Although no serious effort has been made so far to study the typology of Indian megaliths, much is known by now about them, at least in South India, where they lie scattered right from Nagpur to cape Comorin. In Maharashtra alone, where the megalithic remains generally appear to be erratic and sporadic, quite interesting and representative relics have been reported from the districts of Nagpur, Poona, Bhandara and Chanda. Out of all the places the Vidarbha region has maximum concentration. At least 300 megaliths of cairn type have been reported from Maharjhari, alone[1] a place about eight miles west of Nagpur. While Junapani is famous for its stone circles of undressed boulders, at Bhosari[2] in Poona, two menhirs were noticed along with several stone circles and three dolmens. A new series of megaliths brought to light by Prof. Kosambi, has already been referred to. Among other states of Southern peninsula, Andhra, Mysore, Madras and Kerala are dotted with the distribution of different types of megaliths. These include dolmen, cist, stone circle menhir, rock-cut caves, *Kuda-Kallu*, *Topi-kallu* etc. Of these, the rock cut caves of Kerala have their own peculiarity.

The late Professor Subbarao[3] has rightly commented that "no more progress can be made in the study of his problem unless we verify and determine the character of the Megalithic remains in the north." It would therefore, be worth while to refer to Cunningham's[4] exploration in Rajasthan. He discovered a large number of cairns and other megalithic remains in different parts of the region. Near Deosa,[5] about 32 miles away from Jaipur he observed four stone circles and several cairns. In some of the cairns there was nothing, while in others ashes with a few fragments of calcined bones and a

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1. *Indian Archaeology—A Review, 1958-59,* pp. 21-22.
2. H. D. Sankalia, 'Megalithic Monuments Near Poona' *Bulletin of the Deccan College Research Institute,* Vol. I, 1939-40, pp. 178-184.
3. B. Subba Rao, *The Personality of India;* Baroda, 1958, p. 127.
4. *Arch. Survey of India Report,* Vol. VI, Varanasi, 1966.
5. *Ibid.,* p. 108.

little charcoal, were found. Towards the south of the cairns he saw a domical shaped large mound of earth. It was full of human remains in various condition. The greater portion of the calcined bones were contained in an earthern vessel. He also saw there a 15 ft. high menhir as well.

At Machari[1] 22 miles South of Alwar he found a tomb of stone slabs and boulders. Underneath, on digging were observed some ashy bones, a stones ball and a few rude flakes. Similarly at Khera, village[2] about 4 miles away from Fatehpur Sikri, Cunningham located at least seven cairns. While he found grey dust of the ashes, calcined bones under round topped or tumulus shaped cairns, he could not find anything except small atoms of charcoal under a nearly flat topped cairn.

But at Satmas about[3] two miles to the north east of Jagner as many as thirty cairns were located by him. The local inhabitants were of the opinion that those cairns marked the several spots where certain individuals belonging to a marriage party, passing that way were killed in bygone times either by a band of robbers or some enemies. According to one version cairns were raised to mark the spots where those people fell. According to the other, after this massacre, every person passing that way threw a stone on each spot where the mouldering remains of the dead bodies lay and ultimately these were turned into heap of cairns in due course. More or less such custom also prevailed among ancient Celtic people of the High lands of Scotland.

Colonel Todd[4] also recorded the tradition of cairn building by some of Rajputs as well as the Minas. According to Sir John Malcolm[5] the Bhils also raised cairns to the memory of their dead chiefs. They poured oil on the top of these monuments and coated them with red lead afterwards. This reminds us to the fact that some of the megaliths are still worshipped in Maharashtra under the name of some local god. These are often coated with oil and vermilion.

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[1] *Ibid.*, p. 88.

[2] *Ibid.*, pp. 13-14.

[3] *Ibid.*, p. 133.

[4] Col. Todd, *Annals of Rajaputana*, p. 63.

[5] *Arch. Survey of India, Report*, Vol. VI, p. 38.

Recently some cairns and cists have also been excavated[1] in eastern U. P. and Bihar, showing an eastward expansion of the tradition. To this list of monuments in northern India may be added the menhirs located in Kashmir valley and bordering region of Ladakh and Tibet and a cromlech found at Deo-Dhara in the district of Almora.

The foregoing evidences clearly prove that the 'megaliths are indeed a crude form of the stupa and containing that people do the earthly remains of the dead, they stand at once as commemorative and reverential objects, the construction of which was the joint responsibility of the whole community.[2] It has been clearly stated in the early Buddhist texts[3] that the stupas were built for the peace of mind of the masses, preparing them for the efforts to obtain the heaven. Votive stupas, bigger as well as miniature, do suggest that they originally were meant for the commemoration and reverence to the departed soul and for the peace of mind who were alive. This is further proved by the fact that the Moriyas of Pippalivana raised a stupa simply over the charcoals,[4] left after the cremation of the Buddha as they could not get a share of the Buddha's relics, whereas Drona erected another on Buddha's water jar[5]—(*Tumbi*).

While concluding it would be worth while to refer to certain passages of the Satapatha Brahmaṇa dealing with the funerary monuments and the disposal of the dead which may be indicative of the megalithic tradition during the Vedic period. It has been stated that the graves should be made only on the barren soil[6] on a level ground inclining towards north where waters flow from South-easterly direction.[7] Moreover these monuments should always remain exposed to sun[8] and be easily approachable for worship (याचमानं).

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[1] *Indian Arch.—A Review 1962-63, 63-64, 64-65 & 65-66.*

[2] *Ancient India,* No. 12, p. 26.

[3] *Dighanikaya* III 23, 79. 'बहुजना चित्तं पसादेन्ति। ते तत्थ चित्तं पसादेत्वा कायस्य भेदापरं मरणं सुगतिं सग्गं लोकं उपपज्जन्ति।'

[4] *Ibid.,* III, 26. 115.

[5] *Ibid.,* III, 26. 113. 'नवमो तुम्ब थूपो, दसमो अंगार थूपो,' दोणस्स ब्राह्मणस्स तुम्बं'।

[6] *Sat. Br.* 13. x. 1. 14. 'उषरे करोति'

[7] Cf. J. Eggling, *Satapatha Br.* (tr.) Part V. Sacred Books of the East: Delhi, 1963; pp. 421-440.

[8] *Sat. Br.* 13. 8. 1. 13. 'न तस्मिन्कुर्यात्। यस्ये त्यादनूकाशः स्यात्। इ नाभ तत् चित्रे इ एषाम परोऽनुपैति।

This text also describes the structural pattern of the monuments. At least two types have been mentioned. (i) rounded[1] tumulus cairn or stupa type and (ii) cave[2] type. It has been further stated that these monuments should be decorated[3] properly including their surrounding and if the same may not be possible, it may be made at least near a water stream.

From the above reference it may be derived that the first type (परिमंडलानि) of the monument covers burrows, cairns and even dolmens, while the second type (गुहा) may be indicative of Malabar cave and other chamber type burials. So far the reference of decoration is concerned, it may apply to the engravings found on the boulders of commemorative monuments discovered by prof. Kosambi.

Although it is true that Satapatha Brahamaṇa belongs to a quite late date of the Vedic period, the above references do indicate the survival of quite old tradition, for while mentioning these details of the grave monuments, the author of the Brahmaṇa has also not forgotten to record the ancient wars of the early Vedic days when the Aryans completely defeated the Asuras.[4]

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[1] *Sat. Br*. 13. 8. 1. 5. 'या आसुर्यः प्राच्यास्त्वद्ये त्व परिमंडलानि'।

[2] *Ibid*., 13. 8.1. 11. 'गुहा सदवता पिस्यात्'।

[3] *Ibid*. 'चित्रं पश्चात् स्यात्।…यदि चित्रं न स्यात्। आपः पश्चाद्वोत्तर तो वास्यु।'

[4] *Ibid*. 13. 8. 1. 5. 'ते देवा असुरान सपत्नान् आतृव्यान् दिग्भ्योऽनुदंत। तेऽदिक्काः पराभवान्।'

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